COMMONWEALTH OF PENNSYLVANIA.

Department of Agriculture.

BULLETIN No. 171.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH 25, 1901.

BY THE

Pennsylvania Department of Agriculture.

FROM JANUARY 1 TO AUGUST 1, 1908.

HARRISBURG, PA.:
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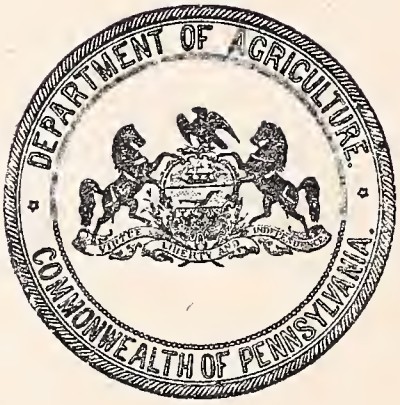
DEPARTMENT OF AGRICULTURE.
COMMONWEALTH OF PENNSYLVANIA.

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AN ACT

To regulate the manufacture and sale of commercial fertilizers.

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered or exposed for sale, for manurial purposes, within this Commonwealth, shall have plainly stamped thereon the name of the manufacturer, the place of manufacture, the net weight of its contents, and an analysis stating the percentage therein contained of nitrogen in a available form, of potash soluble in water, of soluble and reverted phosphoric acid and of insoluble phosphoric acid: Provided, That any commercial fertilizer sold, offered, or exposed for sale, which shall contain none of the above named constituents shall be exempt from the provisions of this act.

Section 2. That every manufacturer or importer of commercial fertilizers as specified in section one of this act shall, on or before the first day of January next ensuing, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of said fertilizer sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he shall pay to the Treasurer of the State the sum of fifteen dollars for each and every brand of such commercial fertilizer sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars, as aforesaid. Every said manufacturer shall, at the same time, file with the Secretary of Agriculture a copy of the analysis required by section one of this act, and shall then be entitled to receive from the Secretary of Agriculture a certificate showing that the provisions of this act have been complied with.

Section 3. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representative, and to have them analyzed, and to publish the results for the information of the public.

Section 4. The Secretary of Agriculture, and such assistants, agents, experts, chemists, detectives and counsel as he shall duly authorize for the purpose, shall have full access, ingress and egress to

all places of business, factories, farms, buildings, carriages, cars and vessels, used in the manufacture, transportation or sale of any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and take therefrom samples for analysis upon tendering the value of said samples.

Section 5. Any person selling, offering, or exposing for sale, any commercial fertilizer without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above named constituents that is contained therein, or for the sale of which all the provisions of section two have not been complied with, shall be guilty of a misdemeanor, and on conviction shall forfeit a sum of not less than twenty-five and not exceeding one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs and fines recovered shall be paid to him or his duly authorized agent, and by him be immediately paid into the State Treasury, to constitute a special fund to be used in accordance with the provisions of section six of this act.

Section 6. The money paid into the Treasury under the provisions of this act shall constitute a special fund, from which the cost of selecting samples, making analyses, and other expenses incident to the carrying into effect the provisions of this act, shall be paid: Provided, That the total amount thus expended shall in no case exceed the amount paid into the Treasury.

Section 7. The term "commercial fertilizers," as used in this act, shall be taken to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime and wood ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of December, one thousand nine hundred and one. All acts or parts of acts inconsistent with this act are hereby repealed, except that existing laws are to continue in force until this act goes into effect.

Approved—The 25th day of March, A. D. 1901.

LETTER OF TRANSMITTAL.

State College, Centre County, Pa.,
August 6, 1908.

Hon. N. B. Critchfield, *Secretary of Agriculture, Harrisburg, Pa.:*

Dear Sir: I have the honor to transmit herewith my report upon the analysis of the samples of commercial fertilizers received from official sampling agents during the spring season of 1908.

Very respectfully,
WILLIAM FREAR.

FERTILIZER VALUATIONS—1908.

The object of an official valuation of commercial fertilizers is to enable the consumer to judge approximately whether he has been asked to pay for a given brand more than the fertilizing ingredients it contains and market conditions prevailing at the time would warrant. It is clear, therefore, that no attempt is made in this valuation to indicate whether the fertilizer valued possesses a greater or less crop-producing capacity than another fertilizer; but only whether it is higher priced than another of the same general composition.

For this purpose the valuation must be so computed as to include all the elements entering into the cost of a fertilizer as it is delivered to the consumer. These elements may be conveniently grouped as follows:

1. The wholesale cost of the ingredients.

2. The jobbers' gross profit on the sale of the ingredients; this includes office expenses, advertising, losses, etc.; for the purpose of the present computation it may be assumed that the sum of this gross profit and the wholesale cost of the ingredients, is equivalent to the retail price of the single ingredients near the wholesale markets in ton lots of original packages for cash.

3. The expense and profit of mixing: This item applies only to complete fertilizers, rock and potash, and ammoniated rock; not to dissolved or ground bone, or to dissolved rock.

4. The expense and profit of bagging.

5. Agents' commission: This item includes not only the commission proper, but every advance in price due to the sale of the goods through an agent in small quantities on time, rather than directly to the consumer in ton lots for cash.

6. Freight from the wholesale market to the point of delivery.

The valuations for 1907 were based:

1. Upon the wholesale prices from September 1, 1906, to March 1, 1907, of the raw materials used in fertilizer manufacture, the quotations of the New York market being adopted for all materials except acidulated phosphate rock and ground bone.

2. Upon an allowance of 20 per cent. of the wholesale prices, above mentioned, to cover jobbers' profit.

By adding the 20 per cent. allowed for jobbers' gross profit to the wholesale price of the several raw materials, the retail price in original packages at the jobbers' warehouse is obtained.

Since the amount of the several valuable fertilizing constituents in the various raw materials is known, it is a simple matter to determine the corresponding retail value per pound of the valuable

fertilizing constituents yielded by each raw material. A schedule of these pound values affords a convenient basis of computation of the value per ton of various fertilizers, whose computation is ascertained by analysis.

The values assigned, for the present, to the other elements in the cost of the fertilizer at the point of delivery are:

3. For mixing, $1.00 per ton.

4. For bagging, $1.00 per ton, in all cases except those in which the article was sold in original packages; the cost of the package being, in such cases, included in the wholesale price.

5. For agents' commissions, 20 per cent. of the cost of the goods f. o. b. at the jobbers' or mixers' warehouse.

6. For freight, $2.00 per ton; the cost of the freight in lots of twelve tons or over, from the seaboard to Harrisburg, averaging $1.88 per ton.

The following valuation of dissolved South Carolina rock illustrates the method:

Phosphoric acid.	Per cent.	Weight per ton.	
Soluble,	11.50	230 lbs at 3c.	$6 90
Reverted,	2.50	50 lbs. at 2½c.	1 25
Insoluble,	1.00	20 lbs at 1½c.	30
Retail cash value of ingredients,			$8 45
Bagging,			1 00
Cash value of goods ready for shipment,			$9 45
Agents' commission, 20 per cent,			1 89
Freight,			2 00
Commercial value per ton,			$13 34

It is not to be expected, of course, that the valuations thus computed will precisely represent the fair price to be charged for a brand in each locality and in every transaction. Market conditions, competition, distance from factory, all introduce minor variations. Nevertheless, to make the approximation reasonably close the average valuation of a given class of goods ought to agree closely with its ascertained average selling price. Whenever such an agreement is no longer obtained by the use of a schedule, it is evident that the schedule of retail values of the constituents, or the added allowances for mixing, etc., requires revision.

It is needful to note here another factor greatly affecting the practical accuracy of these approximations. Their computations would offer little difficulty and their usefulness be far greater, if, by the

ordinary methods of analysis, the exact nature of the ingredients used to supply the several fertilizer constituents, were capable of certain determination. This is, however, possible today to only a limited extent. The valuations are therefore based on the assumption that the fertilizers are uniformly compounded from high quality ingredients, such as are commonly employed in the manufacture of fertilizers of the several classes. Consumers should carefully avoid the error of accepting such valuations as infallible; they are not designed to be used for close comparisons of single brands, but only to indicate whether the price asked for a fertilizer is abnormal. assuming good quality for the ingredients used. From this it is clear that, except as high freights may require, the selling price of a brand should not far exceed the valuation; but that a fertilizer may be made of inferior materials and yet have a high valuation.

The valuations used during 1906 were modified for use during 1907 in accordance with the changes in wholesale prices of fertilizing ingredients and to make the valuations more closely follow the selling price.

The following comparative statement shows the valuations and selling prices of the several classes of fertilizers during 1903 to 1907

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Spring, 1903.				
Complete,	365	24.29	24.57	—.28
Rock-and-potash,	82	14.73	17.20	—2.47
Dissolved bone,	3	30.87	31.17	—.30
Ground bone,	27	27.25	28.67	—1.42
Dissolved rock,	56	13.34	15.13	—1.79
Fall, 1903.				
Complete,	264	22.77	21.98	.79
Rock-and-potash,	74	14.86	15.96	—1.10
Dissolved bone,	11	24.57	23.67	.90
Ground bone,	49	27.07	27.52	—.45
Dissolved rock,	60	13.12	14.64	—1.52
Spring, 1904.				
Complete,	349	25.07	24.28	.79
Rock-and-potash,	75	15.45	16.47	—1.02
Dissolved bone,	2	28.42	31.50	—3.08
Ground bone,	22	27.77	28.20	—.43
Dissolved rock,	41	14.06	14.59	—.53
Fall, 1904.				
Complete,	256	22.53	21.82	.71
Rock-and-potash,	68	14.92	15.89	—.97
Dissolved bone,	6	27.77	24.94	2.83
Ground bone,	38	27.97	27.02	.95
Dissolved rock,	45	14.09	13.89	.20

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Spring, 1905.				
Complete,	374	25.60	24.63	.97
Rock-and-potash,	82	15.49	16.11	—.62
Dissolved bone,	3	22.70	23.83	—1.13
Ground bone,	27	26.72	29.08	—2.36
Dissolved rock,	47	13.86	13.64	.22
Fall, 1905.				
Complete,	285	22.35	21.39	.96
Rock-and-potash,	74	15.04	15.97	—.97
Dissolved bone,	6	25.85	24.78	1.11
Ground bone,	35	28.70	27.70	1.00
Dissolved rock,	49	13.51	14.21	1.30
Spring, 1906.				
Complete,	412	24.76	23.55	1.21
Rock-and-potash,	99	15.19	16.17	—.98
Dissolved bone,	4	22.65	24.40	—1.75
Ground bone,	34	28.23	29.02	—.79
Dissolved rock,	45	12.98	13.75	—.77
Fall, 1906.				
Complete,	266	22.99	21.87	1.12
Rock-and-potash,	71	15.06	15.76	—.70
Dissolved bone,	7	25.33	22.06	3.27
Ground bone,	34	29.12	27.80	1.32
Dissolved rock,	43	12.99	13.45	—.46
Spring, 1907.				
Complete,	424	26.84	24.60	+2.24
Rock-and-potash,	103	16.63	16.94	—.31
Dissolved bone,	6	25.08	22.28	+2.80
Ground bone,	27	29.64	31.55	—1.91
Dissolved rock,	41	14.72	14.64	+.08
Fall, 1907.				
Complete,	280	24.59	22.71	+1.88
Rock-and-potash,	96	15.82	16.58	—.76
Dissolved bone,	8	27.61	22.09	+5.52
Ground bone,	36	28.80	28.92	.12
Dissolved rock,	48	14.67	14.76	.09

The following satement from the weekly reports of the Oil, Paint and Drug Reporter, of New York City, shows the average wholesale prices of fertilizer raw materials from September 1, 1906, to March 1, 1907, and from September 1, 1907, to March 1, 1908:

Wholesale Prices of Fertilizer Ingredients, New York, Oil, Paint and Drug Reporter.

Substance.	Amount priced.	Average price Sept. 1, 1906 to March, 1907.	Average price Sept. 1, 1907 to March, 1908.	Prices Sept. to March, 1907-8, in per cent. of prices, 1906-7.
Sulphate of ammonia,	Cwt.,	3.1152	3.0344	97.4
Nitrate of soda,	Cwt.,	2.5524	2.3882	93.6
Dried blood, H. G.,	Unit (20 lbs.),	2.7561	2.4515	88.9
Concentrated tankage,	Unit (20 lbs.),	2.4463	2.357	96.3
Rough bone,	Ton,	15.50	16.94	109.3
Bone meal,	Ton,	23.00	20.94	91.0
Fish guano, dry,	Unit (20 lbs.),	*2.59	*2.80	108.1
Fish guano, acid,	Unit (20 lbs.),	†2.34	†2.60	111.1
Refuse bone black, oil,	Ton,	14.00	.....	.....
Refuse bone black, sugar,	Ton,	18.00	.....	.....
Phosphate rock, Charleston,	Ton,	6.358	6.875	108.1
Phosphate rock, Tennessee,	Ton,	5.825	6.58	112.9
Acid phosphate,	Unit (20 lbs.),	.6375	.7146	112.1
Double manure salt,	Cwt.,	1.18	1.174	99.5
Sulphate of potash,	Cwt.,	2.20	2.2011	100
Kainit,	Ton,	8.50	8.95	105.3
Muriate of potash,	Cwt.,	1.965	1.961	99.8
Sulphuric acid 66 degrees B.,	Cwt.,	1.25	1.3896	111.1

*Bone phosphate of lime 10 cents per unit.
†Bone phosphate of lime 35 cents per unit.

In ammoniates such as dried blood and fish guano, the unit is of ammonia, of which 82.35 per cent. is nitrogen; in acid phosphate, the unit is of phosphoric acid (phosphorous pentoxid.)

Except in case of fish guano, which shows a marked advance over last year, the prices of ammoniates have decreased from three to ten per cent.

The following summary is taken from the Oil, Paint and Drug Reporter:

Phosphates: The total production of the United States is estimated at 1,917,000 long tons in 1907, against 2,052,742 in 1906.

The financial disburbances of last fall were not to any great extent influential in weakening the market, list prices ruling as follows::

Phosphate rock ground, f. o. b. Charleston, 2,000 lbs. $6.75 @ $7.00; South Carolina phosphate rock, undried, per 2,400 lbs. f. o. b. Ashley River, $5.75 @ $6.00; South Carolina phosphate rock hot air

dried, f. o. b. Ashley River, $7.00 @ $7.25; Florida land pebble. f. o. b. Port Tampa, Fla., $7.50 @ $7.75; Florida H. G. Phosphate, f. o. b. Florida and Georgia ports, $10.25 @ $10.60; Tennessee Phosphate rock, f. o. b. Mt. Pleasant, 78 and 80 per cent., per ton, $6.50 @ $6.75; 75 per cent. guaranteed, $6.00 @6.25; 68—72 per cent., $4.00 @ $4.25.

Raw Materials of Acid Manufacture.

Brimstone.—The year opened with prices sustained at $22.12½ @ $22.50, but during the summer, conditions arose which brought about a drop in the price to $19.50.

Pyrites.—The following were the prices ruling at the end of the year 1907, being but ¼ cent lower on each description than the opening:

Spanish crude unwashed fines 48 @ 52 per cent., 10¼ @ 11; Spanish Smalls washed ore, 8¾ @ 9½; Lump ore, 48 @ 52 per cent., 12½ @ 13; Domestic pyrites fines, 45 per cent. S, 8¾ @ 10½; Furnace size, 45 per cent. sulfur, 10¾ @ 11½.

Sulphuric Acid.—Prices have shown no variation from the basis of 1 cent and upwards for 66 degree according to quantity.

Potash Salts.—The reports of the U. S. Bureau of Statistics show the following entries for consumption during the fiscal year 1906 and 1907.

	1906	1907
Muriate (pounds),	211,875,897	231,327,378
Kieserit, kainit, etc., tons,	379,220	344,005

This trade is so managed that by March nearly all wholesale deliveries of the year are contracted for. The prices for potashes as announced by the German Potash Syndicate on the basis of large lots sold through brokers and delivered at Boston, New York or Philadelphia, are shown in the following table. This schedule shows no change from the list ruling during the preceding year.

Salt.	March, 1907.	After March, 1907.
Muriate, 80 per cent., per 100 pounds,	1.885	1.915
Sulphate, 48 per cent., per 100 pounds,	2.17	2.20
Double manure salt, 48-53 per cent., per 100 pounds,	1.15	1.165
Kainit, 12.4 per cent., actual potash, per ton,	8.25	8.50
Manure salt, 20 per cent. potash, per ton,	14.68	15.20

Composition of Raw Materials.—In order to form a correct idea of the cost per pound of the fertilizer constituents of these materials, it is needful to determine their composition or, in other words, the quantities of valuable constituents each contains. The following table shows the composition of the raw materials used in the manufacture of fetilizers. No analyses of these materials, with the exception of ground bone and dissolved rock, have been made in Pennsylvania. The figures in the following table include the averages of the results of analyses made in Connecticut, New Jersey and Massachusetts during the past year, except in the case of ground bone and dissolved rock phosphates, where Pennsylvania results alone are included.

Composition of Non-Acidulated Fertilizer Ingedients. (Per Cent.)

	Number of samples analyzed.	Nitrogen.	Potash.	Total phosphoric asid.
Sulphate of ammonia,	4	20.39	.....	.....
Nitrate of soda,	24	15.37	.....	.....
Dried blood,	5	10.93	.....	.....
Ground bone,	63	3.23	.....	21.76
Tankage,	13	5.67	.....	11.65
Ground fish,	13	7.83	.....	5.42
Cotton seed meal,*	93	6.66	1.90	3.15
Castor pomace,*	7	4.97	1.00	1.90
Sulphate of potash, H. G.,*	3	.....	49.90	.....
Muriate of potash,	14	.....	50.83	.....
Kainit,	10	.....	14.53	.....
Double sulphate of potash and magnesia,*	7	.....	24.86	.....

*Last years figures.

Composition of Acidulated Fertilizer Ingredients. (Per Cent.)

	Number of samples analyzed.	Total phosphoric acid.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.
Dissolved bone black,†	13	16.74	11.95	3.06	1.73
Dissolved bone,*	14	15.22	5.01	6.34	3.87
Dissolved rock phosphate,	89	15.33	8.79	4.97	1.57

†1905 figures.
*Also contains 1.64 per cent. nitrogen.

Cost per pound of Fertilizer Constituents.—With the composition of these raw materials and their price per ton, hundred weight, or other unit of measure as a basis, the wholesale cost per pound of the valuable constituents can be readily calculated. In many cases the ammoniates are quoted "per unit of ammonia," the term unit being equivalent to per cent.; in goods sold by the ton of 2,000 lbs., the unit is equal to 20 lbs., and 20 lbs. of ammonia contain 16.47 lbs. of nitrogen.

In the case of refuse bone-black, unacidulated, the mean, 28.25 per cent. of phosphoric acid, is assumed to represent the average material on the market.

Phosphate rock is sold by the ton of 2,240 lbs., and on the basis of the bone phosphate of lime it contains, with drawbacks for injurious constituents. Bone-phosphate of lime contains 45.8 per cent. of phosphoric acid; therefore, each per cent. of bone phosphate in a long ton is equivalent to 22.4 lbs., and contains 10.26 lbs. of phosphoric acid.

In the wholesale trade, dried blood, azotine, concentrated tankage and hoof meals are usually sold on the basis of ammonia, disregarding the phosphoric acid present.

Insoluble phosphoric acid in dissolved rock is likewise omitted from consideration, contracts being based solely upon the "available" phosphoric acid; nor in rock phosphates is any claim made for the small quantities of nitrogen and potash they contain, nor in dissolved bone for the potash present.

Under these conditions, the wholesale cost per pound in New York of the valuable constituents of such materials as furnish but a single fertilizing element, these materials being assumed to be in the state of preparation and in the packing in which the manufacturer purchased them, are given in the following table; also a figure representing a fair retail price at the factory, the materials having undergone no change in treatment or packing and the allowance for expenses and profit in retailing being 20 per cent.

Wholesale Cost Per Pound of Fertilizer Constituents. (New York.)

I. Ingredients Supplying One Constituent.

Materials.	Constituent valued.	Wholesale price, cents.	Wholesale price plus 20 per cent.
Sulphate of ammonia,	Nitrogen,	14.88	17.85
Nitrate of soda,	Nitrogen,	15.54	18.64
Dried blood, high grade,	Nitrogen,	14.88	17.85
Concentrated tankage,	Nitrogen,	14.31	17.17
Phosphate rock:*			
Tennessee, 78 per cent.,	Phosphoric acid, total,	.82	.98
South Carolina, 60 per cent.,	Phosphoric acid, total,	1.12	1.34
Acid phosphate,	Phosphoric acid, available,	3.57	4.28
Double manure salts,	Potash,	4.43	5.31
Sulphate of potash,	Potash,	4.52	5.42
Muriate of potash,	Potash,	3.73	4.48
Kainit,	Potash,	2.97	3.56

*The prices of phosphate rock are f. o. b. at the respective points of shipment, not New York. The prices for potash are taken from the schedule of the syndicate, and those of the remainder from the Oil, Paint and Drug Reporter.

The quotations for bone are given without specific reference to quality, so that it is impossible from these data to fairly apportion their several wholesale values to the nitrogen and phosphoric acid contained in this material. As compared with tankage, the general tendency is to assign a higher commercial rating to the phosphoric acid in bone and to the nitrogen, a rating not very different from that given in tankage.

In former years the value assigned to the nitrogen has been the same as that quoted on crushed tankage c. a. f. Baltimore. Last year quotations for crushed tankage not being available the value for nitrogen was based upon quotations for ground tankage 11 per cent. ammonia, 15 per cent. bone phosphate, f. o. b. Chicago. In the present instance quotations for both crushed tankage and ground tankage being lacking the value for nitrogen is based upon quotations for concentrated tankage.

For the two previous years, quotations on ground tankage have been about 5 per cent. in advance of those on concentrated tankage. As indicated last year, quotations on crushed tankage were on an average 12.67 per cent. in advance of these on ground tankage. Increasing the price of concentrated tankage by these percentages we have $2.788 per unit of ammonia as the value assigned to the nitrogen in bone.

This is equivalent to $3.38 per unit of nitrogen.

The average composition of the ground bone and bone meal samples analyzed last fall in Pennsylvania was: Phosphoric acid, 22.09 per cent.; nitrogen, 3.10 per cent.

The prepared bone contains less fat and moisture, and often less nitrogen than the ordinary rough bone, but these differences tend, in a measure, to neutralize each other. Assuming for the rough bone quoted in the New York market the same composition as the bone meal sold in Pennsylvania, and for the value of the nitrogen $3.38 per unit, as previously stated, the values per pound of the several constituents would be:

Wholesale Cost per Pound of Fertilizer Constituents, New York.
II. Bone.

	Constituent valued.	Wholesale price, cents.	Wholesale price plus 20 per cent.
Rough bone,	Nitrogen,	16.90	20.28
	Phosphoric acid,	1.46	1.75
Ground bone,	Nitrogen,	20.89	25.07
	Phosphoric acid,	1.80	2.16

Valuation in Neighboring States.

It is desirable, from all points of view, that the schedules of valuation throughout a district in which similar market conditions prevail, should differ as little as possible. It has been our practice in the past, to conform our schedule to that adopted after very careful cooperative study of market conditions for each year, by the New England States and New Jersey, except where the peculiar conditions of our markets have made the valuations diverge too largely from the actual selling prices, as in the case of ground bone and dissolved rock phosphates. The schedules for these States for 1907 and 1908 are as follows:

Trade Values Adopted by the New England States and New Jersey.

	Cents per Pound.		Values in 1908 in per cent. of those in 1907.
	1907.	1908.	
Nitrogen:			
In ammonia salts,	17½	17½	100
In nitrates,	18½	18½	100
In dry and fine ground fish, meat, blood and mixed fertilizers,	20½	20½	100
In fine ground bone and tankage,	20½	20½	100
In coarse bone and tankage,	15	15	100
Phosphoric acid:			
Water soluble,	5	5	100
Citrate soluble,	4½	4½	.....
In fine bone and tankage,	4.0	4.0	.....
In coarse bone and tankage,	3.0	3.0	100
In mixed fertilizers, insoluble,	2.0	2.0	100
Potash:			
In forms free from muriate,	5.0	5.0	100
As muriate,	4¼	4¼	100

That is, these Stations adopted for 1908 the schedule used in 1907. It should be understood that the station officials are influenced in fixing the schedule not only by wholesale quotations such as those presented on the foregoing pages, but also by a large volume of data from trustworthy sources representing current retail quotations.

The schedule thus adopted reflects very well the wholesale market quotations for the principal nitrogenous, phosphatic and potasic materials going to make up the bulk of the commercial fertilizers used in the states joining in the adoption of the schedule just stated.

The schedule is also adopted for use in Pennsylvania for the year 1908, except as it affects the valuations of dissolved rock and ground bone, the New York wholesale prices for which do not correspond closely with Pennsylvania retail values.

Respecting dissolved rock: The computed average commercial valuations for both the spring and the fall sales were practically identical with the average selling prices for this class of goods, the schedule pound values for water-soluble and citrate-soluble phosphoric acid having been increased in 1907 by one-half cent, although the New York quotations for available phosphoric acid in acid phosphate had not been raised in spite of marked advances in the cost of the corresponding raw materials and of labor. In view of this close agreement between valuation under the 1907 schedule and the selling prices in the fall of that year, and in view of current

retail quotations, it has seemed best to retain during 1908 the pound values scheduled in 1907 for phosphoric acid derived from rock, as they are stated in the schedule given below.

Respecting bone:—The average commercial valuation in the spring of 1907 was $1.91 below the selling price per ton, but in the fall, slightly above the selling price. The schedule values for bone nitrogen had been somewhat increased, reflecting the general advance of nitrogenous materials, although the wholesale quotation for rough bone had shown no change. In view of the fact that the commercial valuations in the fall of 1907 correspond closely with the selling prices, that the wholesale quotations for bone meal from September, 1907, to March, 1908, dropped nine per cent., in the face of a nine per cent. increase in the quoted prices for rough bone, it has seemed unnecessary to make any change in the basis of valuation for ground bone adopted in 1907, in this respect following the action of the New England Stations.

Schedule of Values for Fertilizer Ingredients, 1908.

	Cents per Pound.
Nitrogen:	
In ammonia salts,	17½
In nitrates,	18½
In meat, dried blood and mixed fertilizers,	20½
In fine ground bone and tankage,	15
In coarse bone and tankage,	13
Phosphoric acid:	
Soluble in water, in bone fertilizers.	5
Soluble in water, in rock fertilizers,	3½
Soluble in ammonium citrate, in bone fertilizers,	4½
Soluble in ammonium citrate, in rock fertilizers,	3
Insoluble in ammonium citrate, in bone fertilizers	2
Insoluble in ammonium citrate, in rock fertilizers,	1½
In fine bone, tankage and fish,	3
In coarse bone and tankage,	2½
In cotton seed meal, caster pomace and wood ashes,	4
Potash:	
In high grade sulphate or forms free from muriate,	5
As muriate,	4¼

Potash in excess of that equivalent to the chlorin present, will be valued as sulphate, and the remainder as muriate.

Nitrogen in mixed fertilizers will be valued as derived from the best sources of organic nitrogen, unless clear evidence to the contrary is obtained.

Phosphoric acid in mixed fertilizers is valued at bone phosphoric acid prices, unless clearly found to be derived from rock phosphate.

Bone is sifted into two grades of fineness: Fine, less than 1-50 inch in diameter; coarse, over 1-50 inch in diameter.

The result obtained by the use of this schedule does not cover the items of mixing, bagging, freight and agents' commission. To cover these, allowances are made as follows:

For freight, an allowance of $2.00 per ton on all fertilizers.

For bagging, an allowance of $1.00 per ton on all fertilizers, except when sold in original packages.

For mixing, an allowance of $1.00 per ton on complete fertilizers and rock-and-potash goods.

For agents' commission, an allowance of 20 per cent. is added to the cash value of the goods ready for shipment.

FERTILIZER ANALYSES JANUARY 1, TO AUGUST 1, 1908.

Since January 1, 1908, there have been received from authorized sampling agents fifteen hundred and seventy-six fertilizer samples, of which six hundred and twenty-five were subjected to analysis. Preference is given to those which have not been recently analyzed. In certain cases where two or more samples representing the same brand were received, equal portions from the several samples were united, and the composite sample was subjected to analysis.

The samples analyzed group themselves as follows: 452 complete fertilizers, furnishing phosphoric acid, potash and nitrogen; 4 dissolved bones, furnishing phosphoric acid and nitrogen; 108 rock-and-potash fertilizers, furnishing phosporic acid and potash; 33 acidulated rock phosphates, furnishing phosphoric acid only; 21 ground bones, furnishing phosphoric acid and nitrogen, and seven miscellaneous samples, which group includes substances not properly classified under the foregoing heads.

The determinations to which a complete fertilizer is subjected are as follows: (1) Moisture, useful for the comparison of analyses, for indication of dry condition and fitness for drilling, and also of the conditions under which the fertilizer was kept in the warehouse. (2) Phosphoric acid—total, that portion soluble in water, and of the residue, that portion not soluble in warm ammonia citrate solution (a solution supposed to represent the action of plant roots upon the fertilizer), which is assumed to have little immediate food value. By difference, it is easy to compute the so-called "reverted" acid, which is the portion insoluble in water but soluble in the citrate. The sum of the soluble and reverted is commonly called the "available" phosphoric acid. (3) Potash soluble in water—most of that present in green sand marl and crushed minerals, and even some of that present in vegetable materials such as cotton-seed meal, not being included because insoluble in water even after long boiling. (4) Nitrogen—This element is determined by a method which simply accounts for all present, without distinguishing between the quantities present in the several forms of ammonium salts, nitrates or organic matter. (5) Chlorin—this determination is made to afford a basis for estimating the proportion of the potash that is present as chlorid or muriate, the cheaper source. The computation is made on the assumption that the chlorin present, unless in excess, has been introduced in the form of muriate of potash; but doubtless

there are occasional exceptions to this rule. One part of chlorin combines with 1.326 parts of potash to form the pure muriate; knowing the chlorin, it is, therefore, easy to compute the potash equivalent thereto. (7) In the case of ground bone, the state of sub-division is determined by sifting through accurately made sieves; the cost of preparation and especially the promptness of action of bone in the soil depends very largely on the fineness of its particles the finer being much more quickly useful to the plant.

The law having required the manufacturer to guarantee the amount of certain valuable ingredients present in any brand he may put upon the market, chemical anaylsis is employed to verify the guaranties stamped upon the fertilizer sacks. It has, therefore, been deemed desirable in this report to enter the guaranty filed by the manufacturer in the office of the Secretary of Agriculture, in such connection with the analytical results that the two may be compared. An unfortunate practice has grown up among manufacturers of so wording the guaranty that it seems to declare the presence in the goods of an amount of a valuable constituent ranging from a certain minimum to a much higher maximum; thus, "Potash, 2 to 4 per cent." is a guaranty not infrequently given. In reality, the sole guaranty is for 2 per cent. The guaranteed amounts given for each brand in the following tables, are copied from the guaranties filed by the maker of the goods with the Secretary of Agriculture, the lowest figure given for any constituent being considered to be the amount guaranteed. For compactness and because no essentially important fact is suppressed thereby, the guaranties for soluble and reverted phosphoric acid have not been given separately, but are combined into a single guaranty for available phosphoric acid; in cases where the maker's guaranty does not specifically mention available phosphoric acid, the sum of the lowest figures given by him for soluble and reverted phosphoric acid is used. The law of 1879 allowed the maker to express his guaranty for nitrogen either in terms of that element or in terms of the amomnia equivalent thereto; since ammonia is composed of three parts of hydrogen and fourteen parts of nitrogen, it is a very simple matter to calculate the amount of one, when the amount of the other is given; the amount of nitrogen multiplied by 1.214 will give the corresponding amount of ammonia, and the amount of ammonia multiplied by 0.824 will give the corresponding amount of nitrogen. In these tables, the expression is in terms of nitrogen.

The law of 1901 abolishes this alternative and requires that the guaranty shall be given in terms of nitrogen. Many manufacturers after complying with the terms of the law, insert additional items in their guaranties, often with the result of misleading or confusing

the buyer; the latter will do well to give heed to those items only that are given as the law requires and that are presented in these tables.

A summary of the analyses made this season may be presented as follows:

Summary of Analyses Made This Season.

	Complete fertilizers.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Number of analyses,	455	108	4	33	21
Moisture, per cent.,	9.45	9.76	5.75	8.53	5.35
Phosphoric acid:					
Total, per cent.,	10.07	11.19	12.16	15.43	23.21
Soluble, per cent.,	4.46	5.04	5.47	9.11	.....
Reverted, per cent.,	3.83	4.89	4.55	4.84	.....
Insoluble, per cent.,	1.78	1.26	2.14	1.48	.....
Potash, per cent.,	5.04	3.55	.....	.....	.....
Nitrogen, per cent.,	1.64	.....	1.49	.....	2.96
Mechanical analysis of bone:					
Fine,	.....	.....	.....	.....	65
Coarse,	.....	.....	.....	.....	35
Commercial valuation,	27.47	16.34	23.04	14.86	28.96
Average selling price,	25.69	16.86	21.11	14.72	29.04
Commercial value of samples whose selling price is ascertained,	26.23	16.24	23.09	14.92	28.96

The cases of departure of goods from their guaranteed composition observed this season, including only those cases in which it amounted to two-tenths per cent. or more, were as follows:

Summary of Instances of Deficiency From Guaranty.

	Complete fertilizers	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Deficient in four constituents,	2	.....	.....	.....	.....
Deficient in three constituents,	9	.....	.....	.....	.....
Deficient in two constituents,	38	10	1	3	1
Deficient in one constituent,	133	32	1	4	7
Total number of samples in which deficiencies occur,	182	42	2	7	8

The cases of deficiency noted during the past ten seasons in goods as compared with their guaranties expressed in percentage of the total number of goods of each class analyzed, are as follows:

Percentage of Deficiency 1903-1908.

	Spring, 1903.	Fall, 1903.	Spring, 1904.	Fall, 1904.	Spring, 1905.	Fall, 1905.	Spring, 1906.	Fall, 1906.	Spring, 1907.	Fall, 1907.	Spring, 1908.
Complete fertilizers,	37.5	37.9	39.5	49.2	35.3	37.5	45.4	39.5	39.4	39.3	40.0
Dissolved bone,	33.3	63.6	*	50.0	†100.0	66.6	50.0	28.5	16.6	25.0	‡50.00
Rock and potash,	32.9	43.2	50.7	35.3	30.9	33.0	42.4	40.0	43.7	49.0	39.0
Dissolved rock,	23.2	20.0	20.0	11.1	9.3	10.0	28.8	25.6	19.5	27.0	21.2
Ground bone,	33.3	.....	36.3	36.8	40.0	31.4	49.0	14.7	18.5	27.8	38.0
All classes except miscellaneous,	35.1	44.7	39.6	41.4	32.8	31.4	43.8	35.8	36.1	38.9	38.8

*Only two samples analyzed for which no guarantees are reported.
†Only two samples analyzed for which guarantees are recorded..
‡Only four samples analyzed.

A comparison of the average composition of all samples of complete fertilizers for which guaranties are recorded with the average of the corresponding guaranties, for several seasons past including those of this season, follows:

Average Composition and Guaranty Compared.

	Average composition. Per cent.	Average guaranty. Per cent.
Spring, 1903.		
Phosphoric acid:		
Total,	11.90	10.67
Available,	9.36	8.73
Potash,	3.85	3.63
Nitrogen	1.58	1.61
Fall, 1903.		
Phosphoric acid:		
Total,	10.76	9.65
Available,	8.84	8.13
Potash,	4.09	3.90
Nitrogen,	1.33	1.29
Spring, 1904.		
Phosphoric acid:		
Total,	10.24	9.32
Available,	8.27	7.87
Potash,	4.09	3.90
Nitrogen,	1.58	1.55
Fall, 1904.		
Phosphoric acid:		
Total,	10.49	9.72
Available,	8.59	7.70
Potash,	2.87	2.81
Nitrogen,	1.25	1.29
Spring, 1905.		
Phosphoric acid:		
Total,	10.16	9.42
Available,	8.50	7.92
Potash,	4.55	4.22
Nitrogen,	1.61	1.58
Fall, 1905.		
Phosphoric acid:		
Total,	10.63	9.62
Available,	8.72	8.13
Potash,	2.90	2.42
Nitrogen,	1.26	1.20
Spring, 1906.		
Phosphoric acid:		
Total,	9.73	9.21
Available,	7.88	7.77
Potash,	4.21	3.95
Nitrogen,	1.57	1.53
Fall, 1906.		
Phosphoric acid:		
Total,	10.45	9.70
Available,	8.23	8.16
Potash,	3.12	2.95
Nitrogen,	1.32	1.31
Spring, 1907.		
Phosphoric acid:		
Total,	9.21	8.50
Available,	8.13	7.83
Potash,	4.55	4.31
Nitrogen,	1.52	1.47

Average Composition and Guaranty Compared—Continued

	Average composition. Per cent.	Average guaranty. Per cent
Fall, 1907.		
Phosphoric acid:	10.39	9.42
Total,	8.34	8.07
Available,	3.18	2.72
Potash,	1.39	1.29
Nitrogen,		
Spring, 1908.		
Phosphoric acid:	10.07	8.91
Total,	8.29	7.61
Available,	5.04	4.51
Potash,	1.64	1.59
Nitrogen,		

It is of interest to note how closely the series of valuations, based upon the wholesale prices of raw materials in the principal markets during the most important buying season and upon certain average allowances for expenses and profits on the part of the mixer and jobber, coincides with the retail prices later ascertained. A comparison for several seasons past is given below:

Comparison of Selling Price and Valuation, 1902-1908.

	Selling price.	Valuation.	Excess of valuation over selling price.
Complete fertilizers:			
1902, Spring,	24.10	25.33	1.25
Fall,	21.83	23.31	1.48
1903, Spring,	24.57	24.15	—.42
Fall,	21.98	22.77	.79
1904, Spring,	24.28	24.99	.71
Fall,	21.82	22.53	.71
1905, Spring,	24.63	25.60	.97
Fall,	21.39	22.35	.96
1906, Spring,	23.55	24.76	1.21
Fall,	21.87	22.99	1.12
1907, Spring,	24.60	26.84	2.24
Fall,	22.71	24.59	1.88
1908, Spring,	25.69	26.23	—.54
Dissolved bone:			
1902, Spring,	16.50	17.35	.85
Fall,	25.30	27.08	1.78
1903, Spring,	31.17	30.87	—.30
Fall,	23.67	24.57	.90
1904, Spring,	31.50	28.42	—3.08
Fall,	24.94	27.77	2.83
1905, Spring,	23.83	22.70	—1.13
Fall,,	24.78	25.85	1.11
1906, Spring,	24.40	22.65	—1.75
Fall,	22.06	25.33	3.27
1907, Spring,	22.28	25.08	2.80
Fall,	22.09	27.01	4.92
1908, Spring,	21.11	23.09	1.98
Rock and potash:			
1902, Spring,	16.45	15.05	—1.40
Fall,	15.97	14.46	—1.51
1903, Spring,	17.20	14.74	—2.46
Fall,	15.96	14.86	—1.10
1904, Spring,	16.47	15.46	—1.01
Fall,	15.89	14.92	—.97
1905, Spring,	16.11	15.49	—.62
Fall,	15.97	15.04	—.97
1906, Spring,	16.17	15.19	—.98
Fall,	15.76	15.06	—.70
1907, Spring,	16.94	16.53	—.41
Fall,	16.58	15.82	—.76
1908, Spring,	16.86	16.24	—.62
Dissolved rock:			
1902, Spring,	13.73	13.49	—.24
Fall,	13.54	13.70	.12
1903, Spring,	15.13	13.34	—1.79
Fall,	14.64	13.12	—1.52
1904, Spring,	14.59	14.05	—.54
Fall,	13.89	14.09	.20
1905, Spring,	13.64	13.86	.22
Fall,	12.21	13.51	1.30
1906, Spring,	13.75	12.98	—.77
Fall,	13.45	12.99	—.46
1907, Spring,	14.04	14.72	.68
Fall,	14.16	14.67	.51
1908, Spring,	14.72	14.92	.20

Comparison of Selling Price and Valuation, 1902-1908—Continued.

	Selling price.	Valuation.	Excess of valuation over selling price.
Ground bone:			
1902, Spring,	28.52	26.80	—1.72
Fall,	28.09	27.51	—.58
1903, Spring,	28.67	27.25	—1.42
Fall,	27.52	27.07	—.45
1904, Spring,	28.20	27.70	—.50
Fall,	27.02	27.97	.95
1905, Spring,	29.08	26.72	—2.36
Fall,	27.70	28.70	1.00
1906, Spring,	29.02	28.23	—.79
Fall,	27.80	29.12	1.32
1907, Spring,	31.55	29.64	—1.91
Fall,	28.92	28.80	—.12
1908, Spring,	29.04	28.96	—.08

COMPLETE
Furnishing Phosphoric Acid,

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Allentown Manufacturing Co., Allentown, Pa.		
532	High Grade Potato Phosphate,	O. P. Helfrich, Slatington,	7.65
534	Special $25 Phosphate,	O. P. Helfrich, Slatington,	7.95
	American Agricultural Chemical Co., New York.		
1564	Complete Manure with 10 per cent. Potash.	G. R. Ackley, Sabinsville,	10.05
1556	A. A. C. Co. High Grade Tobacco Manure,	Luther Bros., Stokesdale Jct.,	7.10
1186	A. A. C. Co. Monmouth Co. Special,	Morris Bros., Blossburg,	9.99
1199	‡A. A. C. Co. No. 1 Celery Special,	Jacob Keck, Stokesdale Jct.,	.....
1557	‡A. A. C. Co. No. 2 Celery Special,	H. G. Webster, Wellsboro,	.....
1200	‡A. A. C. Co. No. 3 Celery Special,	Luther Bros., Stokesdale Jct.,	.....
142	A. A. C. Co. Special Potash Mixture,	Wysox Hay and Coal Co., Wysox,	9.95
622	Special Potato and Tobacco Manure,	R. A. Richards & Co., Mendenhall,	10.28
1569	A. A. C. Co. 10 per cent. Potash Mixture for Potatoes.	T. C. Campbell, Knoxville,	9.45
398	10 per cent. Potash Mixture for Potatoes,	A. H. Kirk, Carrolltown,	8.84
1361	Top Dresser for Grass,	J. W. Croft, Ambler,	7.00
597	Ten per cent. Potash Mixture,	Meckley and Geisinger, Alburtis,	8.40
443	Allen's Popular Phosphate,	O. P. Beebe, Montrose,	11.03
300	Bradley's Bean and Potato,	Jos. Rhoades, Somerset,	11.95
91	Bradley's Dissolved Bone and Potash,	S. J. Saint, Sharpsburg,	12.44
1129	Bradley's Niagara Phosphate,	A. Krause & Son, Marwood,	11.33
739	Bradley's Sea Fowl Guano,	Eli Yost, McEwensville,	12.10
293	Canton Chemical Baker's Standard H. G. Guano.	J. D. Miller, Rockwood,	11.49
242	Canton Chemical Baker's Special Wheat, Corn and Grass Mixture.	H. F Gump & Sons, Everett,	12.10
1265	Canton Chemical Resurgam Guano,	H. L. Stultz, Duncansville,	11.48
1126	Clark's Cove King Phillip Alkaline Guano,	Christ Alexander, Millheim,	9.50
343	Crocker's Complete Manure,	Union Coal and Supply Co., Union City.	10.75
1177	Crocker's General Crop Fertilizer,	Rose & McDowell, Mansfield,	11.15
1	Detrick's Corn and Oats Fertilizer,	James McCauley, Mifflintown,	9.95
479	Detrick's Corn and Oats Fertilizer,	W. S. Beistel, Ligonier,	10.05
1522	Detrick's Paragon Ammoniated Bone Phosphate and Potash.	Wm. S. Leeper and Son, Squirrelville.	11.53
469	Detrick's Quick Step Bone Phosphate for Potatoes and Tobacco.	Newton Gouder, Boswell,	7.60
468	Detrick's Royal Crop Grower,	Newton Gouder, Boswell,	12.65
309	Detrick's Standard Potash Fertilizer,	Levi Berkey, Somerset,	8.05
119	Great Eastern General,	E. M. De Long, Loganton,	9.38
285	Great Eastern Northern Corn Special,	Alex. Trent, Coleman,	11.60
1086	Great Eastern Northern Corn Special,	W. A. McCartney, Randolph,	11.60
363	Great Eastern Vegetable Vine and Tobacco,	G. E. Earon, Jersey Shore,	10.40
68	Milsom's Buffalo Fertilizer,	C. E. Stitt, Platea,	9.60
71	Milsom's Buffalo Guano,	C. E. Stitt, Platea,	10.54
1247	Milsom's Corn Fertilizer,	B. Wiley, Elwood City,	13.80
1449	Milsom's Erie King,	A. Bratchie, New Castle,	7.00
900	Milsom's Potato, Hop and Tobacco Fertilizer.	Dunlap Bros., Canonsburg,	11.75
1144	Milsom's Vegetable Bone Fertilizer,	N. H. Long, Delmont,	10.90
69	Milsom's Wheat, Oats and Barley,	C. E. Stitt, Platea,	10.05
500	Moro Phillips' Farmer's Potato Mixture,	J. I. Goss, Shindle,	8.66
1316	Pacific A No. 1 Phosphate,	C. W. Sailor, Ohio Pyle,	9.85
872	Pacific Potato Phosphate 1½-6-5,	Smith & McKelvey, Blairsville,	10.09
272	Packer's Union Animal Corn Fertilizer,	C. J. Barron, Hooversville,	11.15
752	Packer's Union Gardner's Complete Manure.	Clayton Gerould, E. Smithfield,	10.38
397	Packer's Union Universal Fertilizer,	A. H. Kirk, Carrolltown,	11.28
372	Packers, Union Potato Manure,	James A. Eck, Williamsport,	10.20
373	Packer's Union American Wheat and Rye Grower.	James A. Eck, Williamsport,	11.90
436	Quinnipiae Climax Phosphate,	N. F. Walker, Athens,	11.85
6	Read's Leader Blood and Bone,	W. V. Shirk, Oakland Mills,	10.20
123	Read's Standard Superphosphate,	Lott Shoemaker, Windham,	10.90
1184	Reese's Ammoniated Bone Phosphate Mixture.	Morris Bros., Blossburg,	10.53

†Composite sample.
‡See note page 54.

FERTILIZERS.

Potash and Nitrogen.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
†5.00	2.97	2.36	10.33	.....	7.97	.....	8.70	.....	8.70	8.00	1.61	1.50	31.52	30.00	532
†5.62	2.08	.69	8.39	.....	7.70	.....	3.68	.....	*3.68	4.00	1.43	.75	24.64	23.00	534
4.16	2.06	2.06	8.28	7.00	6.22	6.00	10.88	.....	10.88	10.00	3.36	3.30	40.26	38.78	1564
.88	3.70	6.90	11.48	6.00	*4.58	5.00	2.27	5.68	*7.95	9.00	*4.19	5.75	41.56	50.00	1556
4.96	1.42	.82	7.20	7.00	6.38	6.00	10.57	.....	10.57	10.00	3.46	3.29	40.04	36.00	1186
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6.04	4.01	1.96	12.01	10.00	10.05	9.00	6.98	.....	*6.98	7.00	1.05	.82	29.23	25.00	142
5.05	3.22	1.88	10.15	9.00	8.27	8.00	8.37	.....	*8.37	10.00	*1.55	1.65	30.98	30.00	622
3.13	2.51	1.48	7.12	6.00	5.64	5.00	9.94	.....	*9.94	10.00	1.78	1.65	30.58	30.00	1539
1.75	2.42	1.71	*5.88	6.00	*4.17	5.00	11.23	.....	11.23	10.00	1.94	1.65	31.04	30.00	398
6.25	2.18	1.09	9.52	9.00	8.43	8.00	6.13	.....	6.13	5.00	*4.76	4.93	44.41	44.00	1361
2.11	3.57	1.24	6.92	6.00	5.68	5.00	9.81	.....	*9.81	10.00	*1.62	1.65	29.23	28.00	597
6.12	2.46	1.86	10.44	9.00	8.58	8.00	2.17	.....	2.17	2.00	.89	.82	21.94	20.00	443
4.23	4.16	1.12	9.51	9.00	8.39	8.00	4.09	.....	4.09	4.00	.98	.82	23.62	25.00	300
4.67	4.60	1.20	10.47	9.00	9.27	8.00	2.05	.....	2.05	2.00	*.94	1.03	22.29	25.00	91
3.54	4.12	1.48	9.14	8.00	7.66	7.00	1.76	.....	1.76	1.00	1.28	.82	21.99	21.00	1129
5.01	3.27	1.75	10.03	9.00	8.28	8.00	2.20	.....	2.20	1.50	*2.01	2.06	26.89	22.00	739
4.81	3.38	1.68	9.87	9.00	8.19	8.00	3.18	.....	3.18	3.00	2.16	2.06	28.47	27.00	293
5.61	4.29	1.05	10.95	10.00	9.90	9.00	2.02	.....	2.02	2.00	.92	.82	22.74	23.00	242
4.59	3.72	1.15	9.46	9.00	8.31	8.00	4.17	.....	4.17	4.00	*.75	.82	22.40	23.00	1265
3.85	4.35	1.45	9.65	9.00	8.20	8.00	2.17	.....	2.17	2.00	*.87	1.03	20.80	19.65	1126
3.65	5.28	.91	9.84	9.00	8.93	8.00	3.65	.....	*3.65	4.00	1.01	.82	23.58	23.50	343
6.91	2.72	2.04	11.67	8.00	9.63	7.00	1.80	.....	1.80	1.00	.92	.82	22.84	20.00	1177
5.00	3.65	1.82	10.47	10.00	*8.65	9.00	3.37	.....	3.37	3.00	1.17	.82	24.30	22.00	1
4.13	6.14	1.34	11.61	10.00	10.27	9.00	3.17	.....	3.17	3.00	.93	.82	24.51	.....	479
3.66	4.87	1.38	9.91	8.00	8.53	7.00	1.85	.....	1.85	1.00	.93	.82	21.26	19.00	1522
5.30	2.84	2.80	10.94	9.00	8.14	8.00	4.23	.....	4.23	4.00	2.58	2.47	32.31	28.00	469
5.23	3.33	1.85	10.41	9.00	8.56	8.00	2.01	.....	2.01	2.00	1.81	1.65	26.05	23.00	468
1.77	5.17	.79	7.73	7.00	6.94	6.00	5.39	.....	5.39	5.00	1.34	1.24	24.67	22.00	309
4.67	3.90	1.07	9.64	9.00	8.57	8.00	4.61	.....	4.61	4.00	.85	.82	23.64	22.50	119
5.61	3.28	1.95	10.84	10.00	*8.89	9.00	2.32	.....	2.32	2.00	*2.33	2.47	29.54	.....	285
6.08	2.92	1.79	10.79	10.00	9.00	9.00	3.11	.....	3.11	2.00	*2.18	2.47	29.71	26.00	1086
4.96	2.97	2.04	9.97	9.00	*7.93	8.00	3.11	.....	3.11	3.00	2.13	2.06	28.27	28.00	363
3.88	5.28	1.80	10.96	9.00	9.16	8.00	1.87	.....	1.87	1.50	2.19	2.06	28.33	26.00	68
3.77	4.80	1.30	9.87	9.00	8.57	8.00	3.88	.....	*3.88	4.00	.94	.82	23.37	23.50	71
5.55	3.36	2.31	11.22	10.00	*8.91	9.00	2.79	.....	2.79	2.00	*2.16	2.47	29.23	.....	1247
3.19	4.34	1.96	9.49	8.00	7.53	7.00	1.26	.....	1.26	1.00	1.25	.82	21.31	21.00	1449
5.74	3.08	.97	9.79	9.00	8.82	8.00	3.09	.....	3.09	3.00	*1.94	2.06	27.87	28.00	900
3.21	6.30	2.07	11.58	9.00	9.51	8.00	6.63	.....	*6.63	7.00	*3.16	3.29	38.35	32.00	1144
5.18	2.82	1.76	9.76	9.00	8.00	8.00	2.04	.....	2.04	2.00	1.01	.82	21.51	22.00	69
2.98	2.95	1.40	7.33	7.00	*5.93	6.00	5.68	.....	5.68	5.00	*1.20	1.24	23.59	22.00	500
3.63	4.54	1.00	9.17	8.00	8.17	7.00	2.90	.....	2.90	1.00	1.40	.82	23.97	20.00	1316
3.82	3.79	1.15	8.76	7.00	7.61	6.00	4.54	.....	*4.54	5.00	1.34	1.24	24.91	28.00	872
5.20	3.31	2.19	10.70	10.00	*8.51	9.00	2.44	.....	2.41	2.00	2.61	2.47	30.55	24.00	272
4.45	2.05	1.47	7.97	7.00	6.50	6.00	9.87	.....	*9.87	10.00	*2.95	3.29	37.22	35.00	752
3.37	4.65	1.58	9.60	9.00	8.02	8.00	4.19	.....	4.19	4.00	.91	.82	22.93	28.00	397
5.23	4.01	.48	9.72	9.00	9.24	8.00	5.99	.....	*5.99	6.00	2.07	2.06	31.45	32.00	372
4.70	3.70	1.11	9.51	9.00	8.40	8.00	2.14	.....	2.14	2.00	.97	.82	21.44	22.00	373
5.36	2.67	1.43	9.46	9.00	8.03	8.00	2.81	.....	2.81	2.00	1.48	1.03	24.62	21.00	436
3.83	3.17	1.34	8.34	8.00	7.00	7.00	1.20	.....	1.20	1.00	1.04	.82	19.47	18.00	6
6.63	1.76	1.84	10.23	9.00	8.39	8.00	4.65	.....	4 65	4.00	.91	.82	24.33	20.00	123
6.43	3.06	1.53	11.02	10.00	9.49	9.00	6.25	.....	6.25	3.00	.82	82	26.47	23.00	1184

*Constituent falls below guaranty.
†Guaranteed 6 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
326	Reese's Potato Manure,	Walker Bros, Rockwood,	8.98
934	Sharpless & Carpenter Farmer's Bone Phosphate.	The Farmer's Supply Co., New Castle.	11.65
1567	Sharpless & Carpenter Royal Spring Mixture.	Seagers & Co., Westfield,	11.05
335	Susquehanna Ammoniated Bone Phosphate,	A. A. Miller, Somerset,	12.20
463	Susquehanna Bone Phosphate,	S. V. Shank, Sikesville,	12.96
42	Susquehanna Crop Grower,	S. J. Kingler, Winfield,	9.69
99	Susquehanna XXV Phosphate,	J. N. Getz Co., Lock Haven,	11.35
754	Allen's Special Brand Potato Manure,	G. E. Beach, E. Smithfield,	12.00
444	Tygert Allen Star Potato Grower,	O. P. Beebe, Montrose,	10.20
110	Wheeler's Corn Fertilizer,	J. A. Gummo, Mill Hall,	11.30
111	Wheeler's Potato Manure,	J. A. Gummo, Mill Hall,	10.10
1082	Wheeler's Potato Manure,	W. A. McCartney, Randolph,	11.45
794	Wheeler's Royal Wheat Grower,	Wm. S. Ober, New Enterprise,	11.35
1183	Wheeler's Superior Truck,	Connelly & Ridge, Covington,	10.33
319	Williams & Clark Good Grower Potato Phosphate.	Harvey Kretchman, Myersdale,	9.30
382	Zell's Economizer Phosphate,	John Artley, Muncy,	8.90
	Canton Chemical Branch, New York.		
600	Eagle Phosphate,	Geo. F. Hartman, Centre Valley,	7.75
945	Canton Chemical Eagle Phosphate,	Geo. B. Murphy, Keys,	11.85
160	Canton Chemical Resurgam Guano,	S. Z. Gettle, Myerstown,	8.23
538	Potato Manure,	John Scheidy, Copley,	7.15
	Clarks Cove Branch, New York.		
540	Potato and Hop Grower,	Chas. Wootring, Neffs,	7.15
	Great Eastern Branch, New York.		
941	Great Eastern Wheat Special,	Wm. Overdorf, Windsorville,	11.74
	Lazaretto Branch, New York.		
584	Lazaretto Bone Compound,	Henry F. Rupp, Breinigsville,	9.65
672	Lazaretto Special Potato Fertilizer,	Hanover Produce Co., New Oxford,	10.90
	Maryland Branch, New York.		
194	Maryland Special Compound,	L. B. Umstead, Birdsboro,	7.50
585	Special Compound for Potatoes and Tobacco.	Henry F. Rupp, Breinigsville,	10.00
	Moro-Phillips Branch, New York.		
1046	Moro-Phillips C. and G. Complete Fertilizer.	Amos Tomlinson, Richboro,	8.90
643	Moro-Phillips Farmer's Potato Mixture,	J. C. Bonsall, Elwyn,	8.60
642	Moro-Phillips Pure Phuine,	J. C. Bonsall, Elwyn,	11.60
541	Special Compound,	Chas. Wootring, Neffs,	10.40
	Reese Branch, New York.		
193	Reese's Potato Manure,	L. B. Umstead, Birdsboro,	9.50
	Sharpless & Carpenter Branch, New York.		
849	S. & C.'s Gilt Edge Potato and Tobacco Manure.	A. G. Houtz, Mt. Zion,	9.80
1024	Dissolved Bone Phosphate,	J. Kunkle & Son, McKeansburg,	10.20
1363	S. & C.'s Farmer's Bone Phosphate,	J. W. Croft, Ambler,	11.15
1025	No. 1 Bone Phosphate,	J. Kunkle & Son, McKeansburg,	10.75
1026	Soluble Tampico Guano,	J. Kunkle & Son, McKeansburg,	10.48
	Susquehanna Branch, New York.		
1386	Susquehanna Ammoniated Bone Phosphate,	H. P. Passmore & Bros., Oxford,	13.02
658	Susquehanna Crop Grower,	Henry Sunday, East Berlin,	11.48
1388	Susquehanna Potato Phosphate,	H. P. Passmore & Bros., Oxford,	11.45
593	Susquehanna Special Potato and Tobacco Manure.	O. F. Wetzel, Emaus,	9.00
513	Special Potato and Tobacco Manure,	Chas. Leininger, Sinking Springs,	8.20
591	Susquehanna XXV Phosphate,	O. F. Wetzel, Emaus,	9.25
659	Susquehanna XXV Phosphate,	Henry Sunday, East Berlin,	12.23

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
3.79	4.98	1 48	10.25	10.00	*8.77	9.00	6.90	.....	*6.90	7.00	1.06	.82	27.27	25.00	326
3.57	5.12	1.40	10.09	9.00	8.69	8.00	3.96	.....	*3.96	4.00	.93	.82	23.61	25.00	934
5.97	2.50	1.09	9.56	9.00	8.47	8.00	2.33	.....	2.33	2.00	.95	.82	21.85	20.00	1567
5.10	3.27	2.03	10.40	9.00	8.37	8.00	2.08	.....	2.08	2.00	1.86	1.65	26.28	23.00	335
5.09	3.44	1.90	10.43	9.00	8.53	8.00	2.20	.....	2.20	2.00	1.89	1.65	26.76	.....	463
3.85	3.73	1.34	8.92	8.00	7.58	7.00	2.06	.....	2.06	1.00	1.16	.82	21.42	18.50	42
4.83	2.98	1.43	9.24	9.00	*7.81	8.00	1.23	.....	1.23	1.00	.94	.82	20.08	24.50	99
5.67	2.49	1.53	9.69	9.00	8.16	8.00	5.97	.....	*5.97	6.00	2.38	2.06	32.50	25.60	754
4.26	2.47	1.53	8.26	7.00	6.73	6.00	3.99	.....	*3.99	5.00	1.34	1.24	23.62	26.00	444
5.73	3.09	1 85	10.67	9.00	8.82	8.00	2.24	.....	2.24	2.00	1.77	1.65	26.38	25.00	110
6.10	2.39	1.46	9.95	9.00	8.49	8.00	3.28	.....	3.28	3.00	2.11	2.06	28.71	26.00	111
3.81	5.53	2.60	11.94	9.00	9.34	8.00	2.73	.....	*2.73	3.00	*1.97	2.06	28.62	24.50	1082
4.92	3.39	1.35	9.66	9.00	8.31	8.00	2.02	.....	2.02	2.00	.99	.82	21.56	21.00	794
6.51	2.76	1.25	10.52	9.00	9.27	8.00	7.31	.....	7.31	7.00	*2.33	3.29	34.80	30.00	1183
3.42	3.28	1.81	8 51	7.00	6.70	6.00	5.03	.....	5.03	5.00	1.41	1.24	24.94	24.00	319
4.14	4.40	1.20	9.74	9.00	8.54	8.00	2.20	.....	2.20	2.00	.90	.82	21.38	21.00	382
1.86	6.34	1.71	9.91	8.00	8.20	7.00	1.20	.....	1.20	1.00	1.00	.82	20.44	21.00	600
3.29	3.53	1.34	8.16	8.00	*6.82	7.00	1.12	.....	1.12	1.00	.97	.82	18.60	18.00	945
2.32	4.94	1.81	9.07	9.00	*7.26	8.00	4.83	.....	4.83	4.00	1.02	.82	23.24	23.50	160
2.26	4.11	1.56	7.93	7.00	6.37	6.00	5.49	.....	5.49	5.00	*1.12	1.24	23.36	22.00	538
1.61	4.73	1.67	8.01	7.00	6.34	6.00	5.61	.....	5.61	5.00	1.31	1.24	24.36	.....	540
5.36	2.68	2.50	10.54	9.00	8.04	8.00	2.09	.....	2.09	2.00	1.87	1.65	26.19	22.00	941
3.20	6.10	1.81	11.11	10.00	9.30	9.00	3.26	.....	3.26	3.00	1.12	1.03	24.42	21.00	584
4.95	2.89	1.28	9.12	9.00	*7.84	8.00	4.52	.....	4.52	4.00	.99	.82	23.59	21.00	672
2.61	5.43	1.79	9.83	9.00	8.04	8.00	8.46	.....	*8.46	10.00	*1.64	1.65	31.02	30.00	194
4.22	4.13	1.28	9.63	9.00	8.35	8.00	7.20	3.21	10.41	10.00	1.65	1.65	33.86	28.00	585
2.22	5.41	2.07	9.70	9.00	*7.63	8.00	2.09	.....	2.09	2.00	.94	.82	22.78	22.00	1046
2.75	3.73	1.53	8.01	7.00	6.48	6.00	5.60	.....	5.60	5.00	1.34	1.24	24.84	24.00	643
5.18	3.34	1.47	9.99	9.00	8.52	8.00	3.09	.....	3.09	3.00	*1.64	1.65	26.25	25.00	642
3.69	4.04	2.00	9.73	9.00	*7.73	8.00	6.37	.....	6.37	6.00	2.11	2.06	30.99	.....	541
4.88	4.51	1.63	11.02	10.00	9.39	9.00	5.82	.....	*5.82	7.00	*.73	.82	25.52	24.00	193
2.12	5.55	2.24	9.91	9.00	*7.67	8.00	8.56	.....	*8.56	10.00	*1.58	1.65	30.60	30.00	849
4.52	3.43	1.97	9.92	9.00	*7.95	8.00	6.22	.....	6.22	6.00	*1.98	2.06	30.63	28.00	1024
4.00	3.92	1.68	9.60	9.00	*7.92	8.00	4.05	.....	4.05	4.00	1.00	.82	23.16	23.00	1363
3.16	5.40	1.25	9.81	9.00	8.56	8.00	2.21	.....	2.21	2.00	*1.52	1.65	24.24	23.00	1025
5.53	3.45	1.38	10.36	9.00	8.98	8.00	6.07	.....	*6.07	7.00	*2.81	3.29	35.38	34.00	1026
4.72	2.77	1.86	9.35	9.00	*7.49	8.00	2.09	.....	2.09	2.00	*1.61	1.65	23.98	22.00	1386
3.72	3.08	1.48	8.28	8.00	*6.80	7.00	1.12	.....	1.12	1.00	.91	.82	18.46	18.75	658
5.48	2.82	1.86	10.16	9.00	8.30	8.00	5.00	.....	5.00	5.00	1.65	1.65	28.14	26.00	1388
5.08	3.15	1.35	9.58	9.00	8.23	8.00	7.73	2.36	10.09	10.00	1.87	1.65	34.41	32.00	593
3.60	4.73	.97	9.30	9.00	8.33	8.00	10.18	.....	10.18	10.00	1.69	1.65	33.08	32.00	513
1.97	6.23	1.81	10.01	9.00	8.20	8.00	1.08	.....	1.08	1.00	.97	.82	20.17	21.00	591
4.67	3.51	1.40	9.58	9.00	8.18	8.00	1.63	.....	1.63	1.00	1.13	.82	21.84	19.25	659

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Tygert-Allen Branch, New York.		
535	Ten per cent. Potato and Vegetable Manure.	H. B. Robert, Slatington,	8.50
	Williams & Clark Branch, New York.		
583	Americus Universal Ammoniated Dissolved Bone.	Henry F. Rupp, Breinigsville,	10.55
644	Williams & Clark Americus Universal Ammoniated Dissolved Bone.	J. C. Bonsall, Elwyn,	11.70
	Zell Branch, New York.		
563	Zell's Hustler Phosphate,	John Reed, Roedersville,	7.98
562	Zell's Little Giant,	John Reed, Roedersville,	10.13
1355	Zell's Little Giant,	A. S. Tyson, Lansdale,	9.40
1421	Zell's Special Compound for Potatoes and Vegetables.	O. F. Arnold, Dillsburg,	10.05
	American Reduction Co., Pittsburg, Pa.		
1307	Common Sense Pittsburg Guano,	Moses Liphart, Casselman,	5.85
922	†Common Sense Pittsburg Guano,	S. G. Matchett, Clinton,	5.58
480		J. E. Gallagher, New Alexandria,	
1511		P. M. Baldwin, Steamburg,	
891	†Century Bone and Potash,	D. B. Douds & Son, Monaco,	4.65
1510		P. M. Baldwin, Steamburg,	
1305	†Iron City,	C. H. Bird, Addison,	4.05
1078		H. J. Klingler & Co., Butler,	
1319		W. P. Parkhill, Vanderbilt,	
	Armor Fertilizer Works, Baltimore, Md.		
131	Bone Blood and Potash,	Orwell Club, Orwell,	7.65
96	Grain Grower,	Chas. T. Wills & Co., Parnassus,	6.58
132	H. G. Potato,	Orwell Club, Orwell,	7.40
162	Fruit and Root Crop Special,	M. L. Bachman, Lebanon,	8.30
1542	H. G. Potato Fertilizer,	W. S. Henderson, Alexandria,	8.50
95	Royal Ammoniated Bone.	Chas. T. Wills & Co., Parnassus,	8.10
37	Wheat Special,	Adam Ocker, Port Treverton,	5.15
	Wm. C. Ball, Media, Pa.		
639	Favorite,	Wm. C. Ball, Media,	8.58
640	Potato Manure,	Wm. C. Ball, Media,	10.89
	Baltimore Fertilizer Co., Baltimore, Md.		
974	Old Honesty, Your Money's Worth,	I. N. Lightner, Gettysburg,	7.15
	Baltimore Pulverizing Co., Baltimore, Md.		
367	Farmer's Favorite Fertilizer, F. F. F.	G. W. Pearson, Jersey Shore,	6.35
1560	Practical Fertilizer,	G. R. Ackley, Sabinsville,	5.25
	J. H. Bartenschlager, Stewartstown, Pa.		
954	Bartenschlager's Champion,	J. H. Bartenschlager, Stewartstown,	7.10
	Baugh & Sons Co., Philadelphia, Pa.		
1576	‡Special Mixture,	M. N. Jacklin, Williwang,	...
673	†Ammoniated Soluble Alkaline,	J. N. Ruff, New Oxford,	9.48
304		C. H. Smucker, Friedens,	
883		N. J. Hoffman, Geistown,	
208	†Complete Animal Bone Fertilizer,	Adam Stoudt, Shoemakersville,	9.35
58		Tucker & Squires, Springboro,	
212		P. S. Shappel, Mohrsville,	
306	†Double Eagle $25 Phosphate,	C. H. Smucker, Friedens,	9.63
192		A. B. Piersol, Coatesville,	
884		N. J. Hoffman, Geistown,	
925	†Double Eagle $25 Phosphate and Raw Bone Superphosphate.	H. W. Blinn, New Brighton,	8.95
857		N. F. Reed, New Cumberland,	
943		Geo. W. Holtzinger, Red Lion,	

†Composite sample.
‡See note page 54.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
3.82	4.03	1.76	9.61	9.00	*7.85	8.00	10.18	.....	10.18	10.00	*1.64	1.65	32.71	29.00	535
2.90	4.70	2.23	9.83	9.00	*7.60	8.00	2.12	.....	2.12	2.00	*1.61	1.65	24.06	22.00	583
4.92	3.47	1.29	9.68	9.00	8.39	8.00	2.17	.....	2.17	2.00	*1.56	1.65	24.52	24.00	644
3.38	5.83	1.91	11.12	10.00	9.21	9.00	3.90	.....	3.90	3.00	.83	.82	23.83	21.50	563
1.93	5.75	.89	8.57	8.00	7.68	7.00	1.12	.....	1.12	1.00	*.77	.82	18.15	17.50	562
1.58	5.19	1.81	8.58	8.00	*6.77	7.00	1.09	.....	1.09	1.00	.89	.82	18.36	19.00	1355
5.48	3.03	1.53	10.04	9.00	8.51	8.00	4.05	.....	4.05	4.00	2.53	2.47	31.70	28.00	1421
4.72	3.15	1.02	8.89	8.00	7.87	7.00	1.73	.....	1.73	1.00	*1.09	1.23	21.19	16.60	1307
4.13	3.70	1.25	9.08	8.00	7.83	7.00	1.96	.....	1.96	1.00	*1.12	1.23	21.38	16.50	922
														24.00	480
														19.00	1511
3.95	3.37	1.35	8.67	8.00	7.32	7.00	5.02	.....	5.02	4.00	1.32	1.23	24.91	25.00	891
														23.00	1510
														22.00	1305
3.88	5.05	2.80	11.73	9.00	8.93	8.00	2.44	.....	2.44	2.00	1.88	1.65	27.73	23.50	1078
														19.00	1319
7.11	1.38	.59	9.08	9.00	8.49	8.00	.....	6.89	*6.89	7.00	4.15	4.11	43.42	32.38	131
5.43	2.51	1.56	9.50	9.00	*7.94	8.00	2.38	.....	2.38	2.00	*1.45	1.65	23.97	.....	96
6.43	2.06	.74	9.23	9.00	8.49	8.00	6.67	4.02	10.69	10.00	*1.55	1.65	33.99	25.29	132
5.71	2.16	1.05	*8.92	9.00	*7.87	8.00	5.82	.....	5.82	5.00	*1.51	1.65	27.37	24.00	162
6.29	1.84	1.10	9.23	9.00	8.13	8.00	2.27	7.95	10.22	10.00	1.69	1.65	34.69	33.00	1542
6.32	2.11	.92	9.35	9.00	8.43	8.00	4.48	.....	4.48	4.00	*.76	.82	23.01	.....	95
5.38	2.20	97	*8.55	9.00	*7.58	8.00	2.47	.....	2.47	2.00	.83	.82	20.40	.....	37
3.43	5.32	1.48	10.23	10.00	*8.75	9.00	3.92	.....	3.92	3.00	.91	.82	23.40	23.00	639
3.88	5.01	.92	*9.81	10.00	*8.89	9.00	6.81	.....	*6.81	7.00	.82	.82	25.78	26.00	640
.87	6.86	1.48	9.21	.....	*7.73	8.00	2.35	.....	2.35	2.00	.46	.41	15.21	17.50	974
.94	4.62	1.16	6.72	.....	5.56	5.50	3.04	.....	3.04	1.60	*.65	.82	17.37	24.00	367
.97	6.84	2.16	9.97	.....	*7.81	8.00	1.59	.....	1.59	1.00	.60	.41	15.50	20.00	1560
1.25	7.11	2.27	10.63	9.00	8.36	8.00	5.72	.....	5.72	4.00	*.95	1.24	25.17	20.00	954
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.27	3.81	1.56	9.64	.....	8.08	8.00	2.40	.....	2.40	2.00	.61	.41	19.81	17.00	673
														.....	304
														20.00	883
5.69	2.94	1.38	10.01	.....	8.63	8.00	5.14	.....	5.14	5.00	1.86	1.65	29.44	24.60	208
														27.00	58
														24.00	212
5.10	3.65	2.09	10.84	.....	8.75	8.00	1.47	.....	1.47	1.00	1.76	1.65	25.57	.....	306
														24.00	192
														23.50	884
3.02	4.74	2.51	10.27	.....	*7.76	8.00	1.35	.....	1.35	1.00	1.70	1.65	24.08	25.00	925
														22.00	857
														21.00	943

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
1197	‡Niles Special Mixture,	A. R. Niles, Stockesdale Jct.,	....
183	†Excelsior Guano,	E. A. and J. L. Pennock, Chatham,	8.15
56		Tucker & Squires, Springboro,	
211		P. S. Shappel, Mohrsville,	
107	†General Crop Grower for all crops,	E. H. Hays, Lamar,	8.75
59		Tucker & Squires, Springboro,	
207		Adam Stoudt, Shoemakersville,	
956	Grand Rapid H. G. Truck Guano,	Jos. Fulton & Sons Co., Stewartstown.	8.15
712	†Peninsula Grain Producer,	Brillinger & Swartz, Emigsville,	8.90
547		A. J. Harter, Slate Dale,	
821		W. M. Eves & Sons, Millville,	
303	Peninsula Grain Producer,	C. H. Smucker, Friedens,	8.70
924	†Potato and Truck Special,	H. W. Blinn, New Brighton,	7.70
858		N. F. Reed, New Cumberland,	
1303		M. M. Thomas, Somerfield,	
219	†Special Potato Manure,	Isaac Pierson, Bedford,	6.05
209		Adam Stoudt, Shoemakersville,	
374		S. G. Updegraff, Williamsport,	
57	Special Potato Manure,	Tucker & Squires, Springboro,	4.50
1192	†Peruvian Guano, Substitute for Potatoes and all Vegetables.	C. A. Govie, Antrim,	8.91
1032		G. W. Kleckner, Kepners Station,	
1454		C. D. Hostetter, New Wilmington,	
108	†Wrapper Leaf Brand, a Special Manure for Seed Leaf Tobacco.	E. H. Hoys, Lamar,	7.20
1170		M. S. Graybill, Bareville,	
957	†Baugh's Special Potato Manure,	Jos. Fulton & Sons Co., Stewartstown.	5.75
885		N. J. Hoffman, Geistown,	
1122		John Rishel, Zion,	
60	Pure Animal Bone and Muriate of Potash Mixture.	Tucker & Squires, Springboro,	4.75
	W. C. Beckert, Allegheny, Pa.		
88	Odorless Lawn and Garden Fertilizer,	W. C. Beckert, Allegheny,	3.40
	Berg Company, Philadelphia, Pa.		
1165	Lymph Guano for all Crops,	A. B. Groff, New Holland,	7.65
429	†$35 Potato Manure,	Thos. Ream, Palmyra,	8.30
604		Solomon Pusey, West Grove,	
1051	$25 Bone Manure,	J. A. Dannehower, Southampton,	8.05
634	†Standard Bone Manure,	Brinton Walters, Parkesburg,	8.70
1411		T. F. Ream, Lyonsville,	
1166	Tobacco Manure,	A. B. Groff, New Holland,	8.75
	Bowker Fertilizer Co., Boston, Mass.		
75	Corn and Grain Grower,	John Eisenbrown, Rochester,	11.14
746	Hill and Drill Phosphate,	E. R. Thomas, Springville,	12.25
1097	Market Garden Fertilizer,	Kernochan & Co., Titusville,	9.55
753	Potash or Staple Phosphate,	Walter Pierce, E. Smithfield,	11.28
781	Six per cent. Potato Fertilizer,	L. Steingrabe, Mercer,	11.75
747	Stockbridge Special Complete Manure No. 1 for Potatoes and Vegetables.	E. R. Thomas, Springville,	12.30
1520	Special Complete Manure for Potatoes and Vegetables.	J. C. Mattern, Stormstown,	8.05
451	Bowker's Six per cent. Potato Fertilizer,	B. C. Tourje, New Milford,	9.08
440	Bowker's Sure Crop Phosphate,	F. A. Johnson, Little Meadows,	12.94
	Buffalo Fertilizer Co., Buffalo, N. Y.		
1182	Ammoniated Bone Black,	W. W. Juscho, Canoe Camp,	15.95
144	Celery and Potato Special,	Robert Dion, Ulster,	9.85
768	Farmer's Choice,	H. B. Lewis, Mansfield,	11.20
385	Fish Guano,	Wallace Sherbine, Willmore,	12.08
764	Garden Truck,	R. Simons, Sylvania,	12.90
918	H. G. Manure,	Farmer's Operative Supply Co., Imperial.	13.38
321	Ideal Wheat and Corn,	Harvey Fike, Myersdale,	11.35
128	Vegetable and Potato,	C. Workheiser & Co., Potterville,	11.60
	Cambria Fertilizer Co., Johnstown, Pa.		
476	B. and B. Phosphate,	M. A. Zimmerman, Stoyestown,	6.08

†Composite sample.
‡See note page 54.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.						
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.	Found.	Guaranteed.			
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7.34	2.03	1.30	10.67	.....	9.37	8.00	4.46	.....	4.46	4.00	1.04	.82	25.71	22.00	183
														24.00	56
														20.00	211
														21.60	107
6.76	2.22	1.76	10.84	.....	9.08	8.00	1.53	.....	1.53	1.00	1.05	.82	22.64	21.00	59
														18.35	207
4.35	3.69	3.03	11.07	.....	8.04	8.00	3.14	.....	3.14	3.00	2.87	2.47	32.30	26.00	956
4.49	4.05	1.48	10.02	.....	8.54	8.00	2.31	.....	2.31	2.00	1.00	.82	22.15	18.00	712
														20.00	547
														21.00	821
2.50	4.92	1.88	9.30	.....	*7.42	8.00	2.16	.....	2.16	2.00	1.09	.82	21.21	.....	303
														32.00	924
5.58	2.42	.97	8.97	.....	8.00	7.00	6.61	.....	*6.61	7.00	3.09	2.88	36.15	32.00	858
														36.00	1303
														20.00	219
3.82	2.11	1.15	7.08	.....	5.93	5.00	10.43	.....	10.43	10.00	1.85	1.65	31.24	26.10	209
														32.00	374
3.79	2.14	.87	6.80	.....	5.93	5.00	10.42	.....	10.42	10.00	1.80	1.65	31.16	29.00	57
														36.00	1192
5.04	1.82	1.28	8.14	.....	6.86	6.00	7.13	.....	7.13	7.00	*4.06	4.12	40.26	35.00	1032
														38.00	1454
3.44	1.60	1.35	6.39	.....	5.04	3.50	6.40	.....	6.40	5.00	*3.11	3.30	32.70	34.80	108
														28.00	1170
														26.00	957
2.88	2.74	1.20	6.82	.....	5.62	5.00	10.24	.....	10.24	10.00	1.65	1.65	29.95	28.80	885
2.30	6.27	8.62	17.19	15.00	8.57	.....	6.08	.....	6.08	5.00	2.54	2.47	36.87	.....	1122
														35.00	60
.21	5.14	16.39	*21.74	22.00	5.35	.....	2.90	.....	2.90	2.00	*1.58	1.65	28.92	43.00	88
†5.80	2.56	3.27	11.63	.....	8.36	.....	10.91	.....	10.91	8.00	*2.11	3.50	37.16	38.00	1165
5.23	2.62	3.92	11.77	.....	7.85	7.00	10.53	.....	10.53	10.00	*2.48	3.00	38.44	32.00	429
														35.00	604
5.56	3.15	2.60	11.31	.....	8.71	7.00	3.08	.....	3.08	3.00	*1.39	2.00	25.77	25.00	1051
5.76	3.23	2.42	11.41	.....	8.99	8.00	5.57	.....	*5.57	6.00	*1.76	3.00	30.25	29.00	634
														30.00	1411
5.33	2.47	2.75	10.55	.....	*7.80	8.00	5.03	.....	*5.03	6.00	*1.78	3.00	28.80	29.00	1166
3.60	5.21	1.16	9.97	9.00	8.81	8.00	4.15	.....	4.15	4.00	1.04	.82	24.30	.....	75
7.04	1.88	1.71	10.63	10.00	*8.92	9.00	2.17	.....	2.17	2.00	*2.45	2.47	29.98	28.00	746
3.09	3.54	2.45	9.08	7.00	6.63	6.00	8.66	.....	*8.66	10.00	*1.92	2.47	31.30	38.00	1097
5.30	2.85	1.48	9.63	9.00	8.15	8.00	3.35	.....	3.35	3.00	.89	.82	22.41	25.00	753
4.94	2.60	1.19	8.73	7.00	7.54	6.00	5.00	.....	*5.60	6.00	1.00	.82	23.74	22.00	781
2.62	2.29	2.07	7.98	7.00	*5.91	6.00	9.95	.....	*9.95	10.00	3.41	3.29	39.13	36.00	747
4.11	1.95	1.30	7.36	7.00	6.06	6.00	5.20	5.70	10.90	10.00	*3.07	3.29	39.21	35.00	1520
3.83	2.26	1.56	7.65	7.00	6.09	6.00	6.64	.....	6.64	6.00	.88	.82	23.41	26.00	451
5.86	3.68	1.53	11.07	10.00	9.54	9.00	1.98	.....	*1.98	2.00	93	.82	22.86	20.00	440
5.48	5.14	1.28	11.90	9.00	10.62	8.00	3.16	.....	3.16	2.50	1.49	1.23	27.76	25.00	1182
4.63	4.26	1.17	10.06	9.00	8.89	8.00	10.80	.....	10.80	10.00	*1.55	1.64	33.78	28.00	144
5 15	4.44	2.04	11.63	9.00	9.59	8.00	5.45	.....	5.45	5.00	96	.82	26.61	24.00	768
4.68	5.70	1.91	12.29	10.00	10.38	9.00	2.35	.....	2.35	2.00	1.12	.82	24.92	25.00	385
3.95	3.30	1.91	9.16	9.00	*7.25	8.00	6.31	.....	*6.31	7.00	3.57	3.28	37.52	35.00	764
4.31	3.97	1.38	9.66	8.00	8.28	7.00	7.50	.....	*7.50	10.00	*3.15	3.28	37.66	36.00	918
3.47	4.32	1.57	*9.36	10.00	*7.79	9.00	9.93	.....	9.93	5.00	1.88	1.64	33.49	.....	321
4.81	4.45	1.22	10.48	9.00	9.26	8.00	7.39	.....	7.39	7.00	*1.96	2.46	32.72	30.00	128
2.75	3.58	2.17	8.50	8.00	*6.33	6.50	1.61	.....	*1.61	2.00	1.34	1.00	20.90	.....	476

*Constituent falls below guaranty.
†Guaranteed 7 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
470	†Corn and Potato Manure,	Jacob Koontz, Stoyestown,	8.30
395		Shettig Bros., Ebensburg,	
876		W. H. Reese, Willmore,	
	Chicago Fertilizer Co., Chicago, Ill.		
1456	Potash Special,	Wm. Rust, New Wilmington,	12.00
63	Wheat and Corn Special,	G. F. Payne, Springboro,	13.25
	Coe-Mortimer Co., New York.		
923	Columbian Corn and Potato,	S. J. Purdy, Murdocksville,	11.38
79	Genuine Peruvian Guano, Cincha Grade,	I. W. Scott & Co., Pittsburg,	8.40
81	Genuine Peruvian Guano, Lobos Grade,	I. W. Scott & Co., Pittsburg,	6.40
581	Penna. No. 1 Grain Special,	H. D. Sittler, Trexlertown,	9.81
1000	Peruvian Grass Top Dressing (Guano Base).	B. F. Zuck, Ephrata,	6.93
82	Peruvian Market Gardener's Fertilizer Guano Base.	I. W. Scott & Co., Pittsburg,	5.80
80	Peruvian Vegetable Grower (Peruvian Guano Base).	I. W. Scott & Co., Pittsburg,	6.63
833	Gold Brand Excelsior,	Boettinger & Dietz, Danville,	7.18
	Henry Cope & Co., Lincoln University, Pa.		
1349	Potato and Corn Phosphate,	Thomas Haines & Co., Malvern,	9.10
	Josiah Cope & Co., Baltimore, Md.		
275	Potato and Tobacco Phosphate,	Jerome Stufft, Stoyestown,	10.48
234	Potato and Tobacco Phosphate,	H. F. Shoemaker, Charlesville,	9.85
	E. Daron, Dover, Pa.		
961	E. Daron's Harvest King Bone Phosphate,	E. Daron, Dover,	10.20
	J. Scott Diekey, Lancaster, Pa.		
1002	J. S. D. Brand,	J. D. Sellers, Ephrata,	6.90
1160	Tobacco and Truck Fertilizer No. 1,	H. S. Vogel, Manheim,	9.35
1001	Tobacco and Truck Fertilizer No. 2,	J. D. Sellers, Ephrata,	10.75
1003	Eagle Brand,	J. D. Sellers, Ephrata,	10.55
	James G. Downward & Son, Coatesville, Pa.		
187	Ammoniated Bone Phosphate,	Ed. Wollaston, Buck Run,	9.00
1352	All Crop Bone Fertilizer,	Jas. G. Downward & Co., Malvern,	9.15
627	Pioneer Raw Bone Superphosphate,	Jas. G. Downward & Co., Westtown,	9.40
1351	Special Potato Fertilizer,	Jas. G. Downward & Co., Malvern,	9.43
1350	Royal Bone Phosphate,	Jas. G. Downward & Co., Malvern,	7.38
	Eureka Fertilizer Co., Perryville, Md.		
556	Corn and Potato Special,	Geo. Wagner, Snedburg,	9.55
854	Eureka Wrapper Leaf,	Levi Stober, Kleinfeltersville,	9.15
25	Farmer's Favorite Bone Phosphate,	L. Arnold, Pfoutzs Valley,	6.60
156	Grain and Grass Mixture,	E. S. Urich, Myerstown,	7.50
157	High Grade Trucker,	E. S. Urich, Myerstown,	9.18
577	Potato and Vegetable,	M. H. Boyer, Pine Grove,	7.38
855	Imperial Bone Phosphate,	Levi Stober, Kleinfeltersville,	8.55
	Farmers' Fertilizer & Feed Co., Westminister, Md.		
656	Carroll Bone Phosphate,	Chas. C. Brown, East Berlin,	4.40
657	XX Bone Phosphate,	Chas. C. Brown, East Berlin,	7.33
	Farmers' Fertilizer Works, Elizabethtown, Pa.		
863	Animal Bone and Potash,	A. Landis, Middletown,	9.75
860	Special Potato and Tobacco Manure,	A. Landis, Middletown,	9.97
	W. S. Farmer & Co., Baltimore, Md.		
949	Potato and Tobacco Phosphate,	J. A. Myers, Felton,	10.10
	Griffith & Boyd, Baltimore, Md.		
176	Farmer's Potato Manure,	S. K. Chambers & Bro., Elkview,	10.22

†Composite sample.
‡See note page 54.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
3.42	3.55	1.43	8.40	7.00	6.97	6.00	5.87	1.77	*7.64	8.00	1.88	1.50	30.49	28.00 30.00 29.00	470 395 876
.72	5.92	2.35	8.99	.....	*6.64	8.00	3.19	.....	*3.19	4.00	*.47	.82	15.62	22.00	1456
4.32	3.58	1.04	8.94	.....	*7.90	8.00	1.31	.....	1.31	1.00	1.01	.82	20.20	20.00	63
7.19	3.93	5.80	16.92	10.50	11.12	8.50	2.58	.....	2.58	2.50	*1.05	1.23	23.17	22.00	923
3.10	5.05	3.88	12.03	8.50	8.15	6.50	1.60	3.06	4.66	2.00	*5.53	7.06	48.06	53.00	79
2.84	5.87	5.27	*13.98	15.00	*8.71	9.00	1.47	3.92	5.39	4.75	3.10	2.90	38.18	42.50	81
4.83	4.95	6.55	16.33	10.00	9.78	8.00	3.50	.....	3.50	3.00	1.17	.80	27.96	22.00	581
4.06	2.44	.71	7.21	6.00	6.50	4.50	1.60	5.88	7.48	6.00	*8.58	9.00	63.27	62.00	1090
4.68	3.93	2.12	10.73	9.00	8.61	8.00	1.20	9.30	10.50	10.00	5.85	5.74	56.49	55.00	82
4.59	3.20	2.32	10.11	10.00	*7.79	8.00	1.47	8.00	9.47	9.00	*2.83	3.30	39.58	45.00	80
2.49	4.37	1.97	*8.83	10.00	*6.86	8.00	7.48	.....	7.48	6.00	2.72	2.40	34.03	30.00	833
1.91	5.49	.66	8.06	8.00	7.40	7.00	4.56	.....	4.56	4.00	*1.15	1.24	23.24	25.00	1349
5.55	4.46	.98	*10.99	11.00	10.01	10.00	7.31	.....	7.31	7.00	1.05	.82	28.98	.....	275
6.76	2.61	1.42	*10.79	11.00	*9.37	10.00	7.79	.....	7.79	7.00	1 00	.82	28.88	22.80	234
†2.37	5.45	.97	8.79	.....	*7.82	.....	5.14	.....	5.14	5.00	*1.25	1.65	25.04	22.00	961
†1.84	4.35	3.60	9.79	.....	*6.19	.....	1.16	.....	*1.16	2.00	*.68	.82	17.67	16.00	1002
†4.82	2.35	.71	7.88	.....	*7.17	.....	1.20	8.53	*9.73	10.00	*1.39	2.06	31.47	30.00	1160
4.95	2.55	1.53	9.03	.....	*7.50	10.00	5.20	1.64	*6.84	7.00	*1.25	1.65	27.28	23.00	1001
†4.16	5.33	1.72	11.21	.....	9.49	.....	2.71	.....	*2.71	4.00	*.26	.82	15.12	18.00	1003
5.05	3.17	1.30	9.52	9.00	8.22	7.00	3.38	.....	*3.38	3.50	*.68	.85	21.40	23.50	187
5.33	2.71	1.10	9.14	8.50	8.04	7.00	3.35	.....	3.35	3.00	.49	.34	17.12	19.00	1352
5.43	3.45	.90	9.78	10.00	*8.88	9.00	2.41	.....	*2.41	3.00	*2.11	2.47	27.88	33.00	627
4.03	3.21	1.30	8.54	8.00	7.24	7.00	4.64	.....	*4.64	6.00	*.99	1.24	23.00	29.00	1351
3.90	3.81	1.15	*8.86	9.00	*7.71	8.00	3.59	.....	3.59	2.00	*.69	.80	20.85	25.00	1350
3.98	5.44	3.68	13.10	11.00	9.42	9.00	2.21	.....	*2.21	3.00	1.19	.82	24.99	23.00	556
4.97	3.15	3.06	11.18	10.00	8.12	8.00	5.95	.....	*5.95	6.00	*2.15	2.47	31.94	32.00	854
3.98	3.87	2.51	10.36	10.00	*7.85	8.00	1.82	.....	*1.82	2.00	*1.18	1.65	22.06	22.00	25
4.49	4.07	2.75	11.31	10.00	8.56	8.00	2.15	.....	2.15	2.00	.83	.82	21.88	20.50	156
4.59	3.96	3.24	11.79	10.00	8.55	8.00	5.16	.....	*5.16	10.00	1.79	1.65	29.83	30.00	157
4.21	4.46	2.40	11.07	9.00	8.67	8.00	5.64	.....	5.64	4.00	*1.10	1.65	26.58	25.00	577
4.84	3.76	4.00	12.60	10.00	8.60	8.00	1.63	.....	1.63	1.00	1.44	.82	25.02	21.00	855
2.22	4.68	1.20	8.10	8.00	*6.90	7.00	2.63	.....	2.63	2.00	.55	.50	18.10	16.00	656
6.63	3.35	1.35	11.33	10.00	9.98	9.00	3.06	.....	3.06	3.00	1.12	1.00	25.17	18.00	657
5.02	2.32	1.84	9.18	7.00	7.34	.....	5.10	.....	5.10	5.00	*1.55	1.65	26.67	22.50	863
3.72	2.31	2.42	8.45	6.00	6.03	.....	8.20	.....	*8.20	10.00	*2.30	2.47	32.22	30.00	860
3.87	3.42	2.21	9.50	9.00	*7.29	8.00	10.34	.....	10.34	10.00	1.76	1.65	32.89	28.55	949
7.14	2.38	1.47	10.99	9.00	9.52	8.00	6.69	.....	*6.69	9.00	*.75	.82	27.16	26.00	176

*Constituent falls below guaranty.
†Guaranteed 8 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
76	Fish Bone and Potash,	Geo. H. Hegner, Sewickley,	10.05
1005	Double Strength Tobacco Grower,	Bear & Long, Lititz,	9.80
1483	Spring Crop Grower,	W. G. Crow, Point Marion,	7.45
34	‡Per 7 per cent. Guano,	W. M. Mease, Kantz,	....
33	Spring Crop Grower,	W. M. Mease, Kantz,	8.63
14	Valley Fertilizer,	W. H. Kauffman, Port Royal,	9.14
	W. S. Hastings & Son, Atglen, Pa.		
633	Atglen Corn and Potato Guano,	W. S. Hastings & Son, Atglen,	11.58
	S. M. Hess & Bro., Philadelphia.		
984	†Keystone Bone Phosphate,	J. P. Bream, Idaville,	10.35
226		B. F. Dively, Reynoldsville,	
1408		J. Lebo, Carlisle,	
419	†Potato and Truck Manure,	J. D. Shally, Hamlin,	9.75
405		P. W. Wasson, Wasson's Corner,	
850		H. K. Hain, Freeport Mills,	
404	The Scientific Manure,	P. W. Wasson, Wasson's Corner,	7.70
259	†Special Corn Manure,	David Price, Everett,	9.30
190		Joseph Russell, Ercildown,	
322		A. E. Growell, Rockwood,	
402	†Special Compound,	P. W. Wasson, Wasson's Corners,	10.28
186		Joseph Russell, Buck Run,	
994		S. H. Most, Morgantown,	
260	†Special Potato Manure,	David Price, Everett,	9.50
163		Adam Yeagley, Jonestown,	
430		H. Seltzer, Palmyra,	
245	Superior Potash Mixture,	David Price, Everett,	10.10
996	Tobacco Manure,	Stephen H. Mast, Morgantown,	7.58
	Wm. J. Hess, Quarryville, Pa. (A. A. C. Co. for)		
1283	No. 2 for Grain and Grass,	Wm. J. Hess, Quarryville,	11.00
	Hubbard & Co., Baltimore, Md.		
1518	Hubbard's Columbia Gem Phosphate,	J. K. Kephart, Philipsburg,	7.50
1339	Hubbard's Climax Bone Superphosphate,	B. F. Horting, Newport,	6.28
1441	Hubbard's Bone Blood and Potash for Potatoes and all other crops.	J. A. C. Rider, Tyrone,	5.45
502	‡Hubbard's Truckers 5 per cent. Royal Seal Compound.	Wm. Thompson, Jr., Centre Furnace,	....
503	‡Hubbard's Trucker 10 per cent. Guano for Early Truck and Vegetables.	Wm. Thompson, Jr., Centre Furnace,	....
	M. P. Hubbard & Co., Baltimore, Md.		
35	Hubbard's Fish Bone and Potash,	F. A. Begaman, Port Treverton,	8.00
	International Seed Co., Rochester, N. Y.		
450	International Potato and Truck Manure,	E. D. Gardner, New Milford,	12.50
49	Potato and Truck Manure,	F. H. Fowler, Linesville,	8.48
785	A 1 Special Manure,	L. S. Brown, Milledgeville,	11.89
	Jarecki Chemical Co., Sandusky, Ohio.		
341	Lake Erie Fish Guano,	J. E. Nicholson, Erie,	14.75
791	No. 1 Fish Guano,	E. H. Smith, Guys Mills,	16.80
1245	H. G. Guano and Potash,	Ross Smith, Elwood,	15.55
790	Raw Bone and Guano Mixture,	E. H. Smith, Guys Mills,	9.90
	T. S. Kenderdine & Sons, Newtown, Pa.		
1366	Kenderdine's Bone Phosphate,	Hobensack Bros., Ivyland,	9.10
1367	Kenderdine's Potato and Corn Phosphate,	Hobensack Bros., Ivyland,	9.95
	Keystone Bone Fertilizer Co., Philadelphia, Pa.		
554	Keystone Grain and Grass Manure,	Henry Yoder, Pine Grove,	8.75
988	†Keystone Vegetable Guano,	L. A. Geiger, Joanna,	10.15
1053		Brandreth & Mattis, Hatboro,	
1052	Keystone Truck Guano,	Brandreth & Mattis, Hatboro,	13.25

†Composite sample.
‡See note page 54.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
5.92	2.11	1.50	9.53	8.00	8.03	7.00	3.06	.....	3.06	3.00	*1.26	1.50	23.79	27.00	76
6.50	2.30	.69	9.49	9.00	8.80	8.00	3.24	.....	3.24	3.00	*2.47	2.50	30.39	27.00	1005
3.09	3.61	1.35	8.05	7.50	6.70	6.50	5.60	.....	5.60	4.50	1.77	1.65	26.98	28.00	1483
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.95	3.03	1.49	9.47	7.50	7.98	6.50	4.81	.....	4.81	4.50	*1.37	1.65	25.84	23.00	33
3.98	3.86	1.84	9.68	9.00	7.84	8.00	3.01	.....	3.01	3.00	.47	.40	16.48	18.00	14
2.17	5.19	1.09	8.45	.....	*7.36	8.00	5.49	.....	5.49	5.00	*1.27	1.65	24.90	23.00	633
3.98	4.43	1.50	*9.91	10.00	8.41	8.00	1.85	.....	1.85	1.00	1.11	.82	21.97	19.00 20.00 ..... 29.50	984 226 1408 419
3.74	3.99	2.10	*9.83	10.00	*7.73	8.00	6.25	.....	6.25	6.00	2.44	2.40	32.66	31.75 30.00	405 850
2.63	3.28	1.17	*7.08	8.00	*5.91	6.00	6.22	.....	6.22	5.00	1.31	1.20	24.42	23.40	404
3.77	4.19	1.66	*9.62	10.00	*7.96	8.00	2.40	.....	2.40	2.00	.97	.82	21.36	21.00 22.00 19.00	259 190 322
3.82	4.25	1.48	*9.55	10.00	8.07	8.00	4.48	.....	4.48	4.00	.94	.82	23.55	22.50 22.00 25.00	402 186 994
5.02	3.24	1.43	*9.69	10.00	8.26	8.00	7.46	.....	7.46	7.00	*2.90	3.20	36.48	34.50 34.00 32.00	260 163 430
5.10	3.18	1.86	10.14	10.00	8.28	8.00	8.69	.....	*8.69	10.00	*1.51	1.60	31.12	30.00	245
2.52	5.22	2.21	*9.95	10.00	*7.74	8.00	5.85	.....	*5.85	6.00	*2.34	2.40	31.66	30.00	996
3.65	3.67	1.22	8.54	8.00	7.32	7.00	1.14	.....	1.14	1.00	.94	.82	19.21	18.50	1283
1.71	6.36	2.73	*10.80	11.25	*8.07	9.50	1.71	.....	1.71	1.00	1.16	.41	22.03	20.00	1518
5.61	1.72	2.60	9.93	9.75	*7.33	8.25	4.71	.....	4.71	4.00	1.33	.83	25.71	20.00	1339
†4.99	1.87	.74	*7.60	.....	*6.86	.....	5.94	.....	*5.94	7.00	3.35	3.30	35.32	35.00	1441
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.23	2.25	.74	7.22	7.00	6.48	6.00	2.22	.....	2.22	1.00	.44	.21	14.29	15.00	35
6.25	2.09	1.29	9.63	9.00	8.34	8.00	7.48	.....	7.48	7.00	1.35	1.25	29.10	28.00	450
5.18	3.18	1.40	9.76	9.00	8.36	8.00	7.31	.....	7.31	7.00	1.53	1.25	29.80	29.00	49
4.24	2.11	1.06	7.41	7.00	6.35	6.00	11.52	.....	11.52	10.00	*2.14	2.40	34.59	35.00	785
5.76	3.92	.69	10.37	9.00	9.68	8.00	3.12	.....	3.12	2.50	1.25	1.25	25.17	21.00	341
4.54	4.83	.97	10.34	9.00	9.37	8.00	2.00	.....	2.00	2.00	*.93	1.04	22.28	25.00	791
4.12	4.23	.88	9.23	9.00	8.35	8.00	6.85	.....	*6.85	7.00	.85	.83	25.52	26.00	1215
4.62	4.37	6.88	*15.87	16.00	8.99	.....	1.67	.....	1.67	1.00	1.91	1.66	28.96	26.00	790
7.06	2.42	1.73	11.21	9.00	9.48	7.00	4.96	.....	*4.96	5.00	2.72	2.47	34.63	32.00	1366
7.49	2.88	1.29	11.66	9.00	10.37	7.00	5.02	.....	5.02	5.00	1.77	1.65	30.82	28.00	1367
.64	5.97	2.69	9.30	8.00	*6.61	7.00	4.10	.....	4.10	1.00	1.26	.82	23.25	18.50	554
1.43	4.99	2.55	8.97	7.00	6.42	6.00	8.07	.....	8.07	6.00	2.21	1.65	31.74	23.00 24.00	988 1053
3.62	3.70	.94	8.26	7.00	7.32	6.90	2.40	.....	2.40	2.00	3.51	3.30	32.84	28.00	1052

*Constituent falls below guaranty.
†Guaranteed 8 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
1054	Keystone Early Potato Manure,	Brandreth & Mattis, Hatboro,	7.55
1055	Keystone Sweet Potato Manure,	Brandreth & Mattis, Hatboro,	10.00
	Lancaster Chemical Co., Lancaster, Pa.		
1289	Flag Brand Superphosphate,	H. C. Breckbill, Strassburg,	9.65
1154	No. 1 Tobacco and Vegetable Fertilizer,	E. B. Ruhl & Son, Manheim,	10.30
	Lancaster Bone Fertilizer Co., Lancaster, Pa.		
667	National Crop Grower,	H. W. Hoffnagle, New Oxford,	6.33
654	Special Guano,	W. C. Leib, East Berlin,	5.68
	Lebanon Fertilizer Works, D. Levan, Lebanon, Pa.		
27	Levan's General Crop Grower,	J. H. Stover, East Salem,	8.24
1394	Levan's Special Potato and Tobacco Fertilizer.	H. Levan, Heilmandale,	10.23
422	†Levan's Special Truck Fertilizer,	Wm. Ballets, Ft. Hunter,	3.40
24		J. H. Stover, Thompsontown,	
431		H. Levan, Palmyra,	
427	†Levan's Special Corn Fertilizer,	H. Levan, Lebanon,	8.38
22		J. H. Stover, Van Dyke,	
561		Ed. Maybury, Pine Grove,	
	Lister's Agricultural Chemical Works, Newark, N. J.		
1335	Lister's Grass and Oat Fertilizer,	A. W. Berkheiser, Jefferson Sta.,	8.38
102	Lister's G. Brand,	Knecht Bros., Parvin,	10.95
329	Lister's Golden Sheaf,	N. O. Bruner, Rockwood,	9.25
508	Lister's Harvest Queen Phosphate,	Katchell & Griffith, Knauers,	13.00
1014	Lister's No. 2 Corn Fertilizer,	R. D. Sames, Coopersburg,	11.27
103	Lister's Special Crop Producer,	Knecht Bros., Parvin,	9.50
1534	Lister's Special Corn and Potato Fertilizer,	S. L. Stryker, Petersburg,	13.38
648	Lister's Special Potato Fertilizer,	W. E. Erwin, Somerton,	11.50
914	Special Crop Producer,	Farmer's Co-Operative Supply Co., Imperial,	10.50
449	Lister's Special 10 per cent. Potato,	L. E. Griffing, Heart Lake,	10.60
1015	Lister's Potato Fertilizer No. 2,	R. D. Sames, Coopersburg,	10.22
358	Lister's Success,	Skelton & Sperry, Crossingville,	13.75
738	Lister's Potato and Corn Fertilizer No. 2,	B. Savidge, Turbotville,	14.95
365	Lister's Special Tobacco Fertilizer,	A. F. Wentz, Jersey Shore,	8.80
	Frederick Ludlam, New York.		
702	Ludlam Cecrops Fertilizer, C. and G. Brand.	Zinn Bro., York,	10.18
701	Ludlam Cecrops, Fertilizer, Harvest Queen,	Zinn Bro., York,	11.90
939	Ludlam Cecrops Fertilizer, Palmetto,	Wm. Overdorf, Windsorville,	10.48
707	Ludlam Cecrops Fertilizer, Spring Special,	Zinn Bro., York,	9.08
703	Ludlam Cecrops Fertilizer, Standard,	Zinn Bro., York,	11.79
705	Ludlam Cecrops Fertilizer, Standard Potash,	Zinn Bro., York,	11.40
	Mapes Formula and Peruvian Guano Co., New York.		
1358	The Mapes Complete Manure A Brand,	H. S. Beidler, Doylestown,	4.85
522	Mapes Corn Manure,	F. S. Stover, Bowmansdale,	5.95
1198	‡The Mapes Complete Manure for Heavy Soils.	A. R. Niles, Stokesdale Jct.,	.....
523	Mapes Economical Potato Manure,	F. S. Stover, Bowmansdale,	5.55
521	Mapes General Crop Brand,	F. S. Stover, Bowmansdale,	6.93
1007	Average Soil Complete Manure,	Muth & Co., Lititz,	10.05
520	Mapes Complete Manure 10 per cent. Potash,	F. S. Stover, Bowmansdale,	8.28
558	Mapes Top Dresser Improved Full Strength.	A. F. Kimmel, Pine Grove,	7.15
569	Potato Manure,	A. F. Kimmel, Orwigsburg,	6.80
101	The Mapes Tobacco Starter Improved,	R. W. McCormick & Son, Lock Haven.	5.75
1573	The Mapes Tobacco Manure Wrapper Brand.	H. G. Smith, Tioga,	6.00
1196	The Mapes Vegetable Manure or Complete Manure for Light Soils.	A. R. Niles, Stokesdale Jct.,	10.45

†Composite sample.
‡See note page 54.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
5.84	2.84	.74	9.42	9.00	8.68	8.00	10.59	.....	10.59	9.00	*2.71	2.88	38.94	31.00	1054
8.46	3.71	1.47	13.64	9.00	12.17	8.00	10.43	.....	10.43	10.00	1.90	1.65	39.26	29.00	1055
1.42	5.23	2.37	9.02	9.00	*6.65	8.00	2.26	.....	2.26	2.00	*1.22	1.24	21.08	21.00	1289
2.44	4.29	2.09	8.82	8.50	*6.73	7.50	2.67	3.45	*6.12	7.00	*1.67	2.06	27.93	30.00	1154
2.68	6.14	1.49	10.31	9.00	8.82	8.00	1.91	.....	1.91	1.00	1.16	.41	22.56	17.50	667
2.64	4.25	2.08	8.97	8.00	*6.89	7.00	5.77	.....	5.77	4.00	.82	.82	22.96	24.00	654
2.42	6.26	1.35	10.03	9.00	8.68	8.00	2.48	.....	2.48	1.00	.87	.82	21.49	17.50	27
3.65	3.92	1.19	8.76	9.00	*7.57	8.00	8.47	.....	8.47	6.00	*1.45	1.65	29.32	21.50	1394
4.36	3.22	.97	8.55	8.00	7.58	7.00	9.76	.....	*9.76	10.00	*1.16	1.65	29.17	29.00	422
														29.00	24
														25.75	431
														17.00	427
2.68	5.25	1.35	9.28	9.00	*7.93	8.00	3.34	.....	3.34	2.00	.98	.82	22.06	18.75	22
														17.00	561
6.13	2.27	1.76	10.16	9.00	8.40	8.00	4.19	.....	4.19	4.00	.94	.82	24.02	20.00	1335
4.95	3.53	1.43	*9.91	10.00	8.48	8.00	4.15	.....	4.15	4.00	.95	.82	23.77	22.25	102
3.14	4.70	1.28	*9.12	10.00	*7.84	8.00	2.28	.....	2.28	2.00	.54	.42	15.96	19.00	329
6.20	3.16	2.17	11.53	11.00	9.36	9.00	2.27	.....	2.27	2.00	1.73	1.24	27.21	25.00	508
6.37	4.12	2.22	12.71	11.00	10.49	10.00	4.17	.....	4.17	4.00	1.83	1.65	30.91	28.00	1014
5.57	2.57	1.45	9.59	8.00	8.14	7.00	1.18	.....	1.18	1.00	1.03	.83	20.97	20.25	103
4.67	2.83	1.71	9.21	9.00	*7.50	8.00	3.06	.....	3.06	3.00	1.79	1.65	25.84	25.00	1534
5.69	3.25	1.58	10.52	9.00	8.94	8.00	3.43	.....	3.43	3.00	1.82	1.65	27.87	27.00	648
2.78	4.56	2.24	9.58	8.00	7.34	7.00	1.15	.....	1.15	1.00	.86	.83	19.12	20.00	914
5.97	2.99	1.78	10.74	9.00	8.96	8.00	12.22	.....	12.22	10.00	2.01	1.65	37.93	30.00	449
9.69	.62	2.35	12.66	11.00	10.31	10.00	4.13	.....	4.13	4.00	1.66	1.65	30.18	28.00	1015
5.90	3.69	1.40	*10.99	11.00	9.59	9.00	2.28	.....	2.28	2.00	1.36	1.24	25.15	23.00	358
8.86	2.45	.54	11.85	9.00	11.31	8.00	4.24	.....	4.24	3.00	1.91	1.65	31.50	23.00	738
5.13	3.83	2.52	11.48	10.00	8.96	8.00	2.27	.88	3.15	3.00	2.35	2.06	30.88	25.50	365
4.27	4.09	1.02	9.38	9.00	8.36	8.00	2.00	.....	2.00	2.00	.56	.41	16.08	17.75	702
4.57	3.96	1.29	9.82	9.00	8.53	8.00	2.22	.....	2.22	2.00	.96	.82	21.68	19.65	701
5.37	3.81	1.55	10.73	10.00	9.18	9.00	3.21	.....	3.21	3.00	.97	.82	23.67	21.00	939
6.25	3.20	1.14	10.59	10.00	9.45	9.00	6.57	.....	*6.57	7.00	*.78	.82	26.53	23.80	707
4.91	3.22	1.79	9.92	9.00	8.13	8.00	5.27	.....	5.27	5.00	1.74	1.65	28.57	25.00	703
4.87	3.28	1.31	9.46	9.00	8.15	8.00	4.21	.....	4.21	4.00	*.78	.82	22.63	21.10	705
1.25	6.97	4.95	13.17	12.00	*8.22	10.00	3.22	.....	3.22	2.50	2.77	2.47	32.59	32.00	1358
.88	5.66	4.91	11.45	10.00	*6.54	8.00	6.96	.....	6.96	6.00	3.16	2.47	36.96	38.50	522
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.51	3.74	2.91	7.16	6.00	4.25	4.00	1.20	7.39	8.59	8.00	3.59	3.29	38.26	38.50	523
1.22	7.04	2.96	11.22	10.00	8.26	8.00	2.07	.....	2.07	2.00	1.76	1.65	25.58	24.50	521
1.30	5.08	1.56	7.94	.....	*6.38	7.00	.67	4.60	5.27	5.00	*3.91	4.12	27.58	37.00	1007
.53	3.43	1.84	5.80	5.00	3.96	3.00	10.36	.....	10.36	10.00	2.44	2.06	32.24	35.00	520
.45	5.72	2.39	8.56	8.00	6.17	.....	.93	3.24	4.17	4.00	*8.87	9.88	60.62	55.00	558
1.40	5.43	2.81	9.64	9.00	*6.83	8.00	.80	6.74	7.54	6.00	*3.69	3.71	40.44	40.00	569
.17	5.28	2.25	*7.70	8.00	*5.45	6.00	.40	1.99	2.39	1.00	4.83	4.12	38.06	40.00	101
.26	2.55	3.51	6.32	4.50	2.81	.....	1.60	9.30	10.90	10.50	6.73	6.18	55.15	52.00	1573
.69	6.17	2.42	9.28	8.00	6.86	6.00	1.07	6.20	7.37	6.00	5.65	4.94	49.52	42.00	1196

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	D. B. Martin & Co., Philadelphia, Pa.		
458	Corn and Cereal Special,	John Noy, Coleman,	12.00
94	†Claremont Vegetable Grower,	J. H. Thompson, Harmarville,	9.38
1365		H. H. Trumbauer, Quakertown,	
1288	Claremont Vegetable Grower,	H. C. Breckbill, Strassburg,	12.00
543	†Martin's Gilt Edge Potato Manure,	Elias Wootring Sons, Schnecksville,	9.00
287		John Noy, Coleman,	
933		Wampum Hdw. Co., Wampum,	
200	†One Eight and Four,	J. W. Rentschler, Hamburg,	10.15
286		John Noy, Coleman,	
161	†Martin's Special Potato Manure,	Wm. J. Bowman, Lebanon,	10.80
93		J. H. Thompson, Harmarville,	
231		H. G. Diehl, Charlesville,	
896		A. E. Walker, Burgettstown,	
232	†Sure Grower,	H. G. Diehl, Charlesville,	10.10
901		R. J. Wallace, Cannonsburg,	
544	Martin's Prize Potato,	Elias Wootring Sons, Schnecksville,	6.00
	McCalmont & Co., Bellefonte, Pa.		
1115	$25 Champion Ammoniated Bone Superphosphate.	McCalmont & Co., Bellefonte,	8.00
	Michigan Carbon Works, Detroit, Mich.		
353	General Crop Fertilizer,	Davis & Hyde, Spartansburg,	13.30
354	Red Line Complete Manure,	Davis & Hyde, Spartansburg,	9.60
	Miller Fertilizer Co., Baltimore, Md.		
20	Corn Fertilizer,	S. P. Rider, Van Dyke,	8.48
688	Harvest Queen,	C. G. Carbaugh, Hanover,	8.25
711	Hustler Phosphate,	Brillinger & Swartz, Emigsville,	8.20
1399	Potato and Vegetable Grower,	Wendel & Wadle, Shippensburg,	6.90
652	Club Brand,	P. C. Smith, East Berlin,	8.00
	Mowery & Latshaw, Spring City, Pa.		
1371	Clover Brand Phosphate,	Mowery & Latshaw, Spring City,	11.00
	Nassau Fertilizer Co., New York.		
1327	Common Sense Potato Manure,	Frank Koenig, Auburn,	10.40
48	General Favorite,	F. E. Brown, Lewisburg,	10.85
167	Old Hickory,	Amos Kreider, Harpers,	10.55
255	Special Potato Fertilizer,	A. M. McClure & Co., Everett,	11.20
573	Special Potato Fertilizer,	Berger & Berger, Pine Grove,	7.15
574	Wheat and Grass Grower,	Berger & Berger, Pine Grove,	9.05
	Northwestern Fertilizer Co., Detroit, Mich.		
1471	Northwestern Challenge Crop Grower,	A. B. Mendenhall, Benton,	12.50
1224	Northwestern Market Garden Phosphate,	A. B. Mendenhall, Benton,	11.15
1563	Success Phosphate,	G. R. Ackley, Sabinsville,	8.50
732	Northwestern Challenge Crop Grower,	H. L. Lindner, Pottsgrove,	11.45
717	Northwestern Complete Compound,	Albert Baker, Emigsville,	11.95
	G. Ober & Sons Co., Baltimore, Md.		
1113	Ober's Special Plant Food,	W. M. Atkinson, McVeytown,	8.82
951	Ober's Stag Guano,	A. W. Trout, Stewartstown,	11.35
	Ohio Farmers' Fertilizer Co., Columbus, O.		
52	Ammoniated Bone and Potash,	Linesville Coal, Lime and Cement Co., Linesville.	10.35
1227	Corn, Oats and Wheat Fish Guano,	J. A. Boak, Princeton,	14.00
53	Excelsior Guano,	Linesville Coal, Lime and Cement Co., Linesville.	9.00
64	Corn, Oats and Fish Guano,	C. R. Forbes, Albion,	9.95
54	General Crop Fish Guano,	Linesville Coal, Lime and Cement Co., Linesville.	10.53
72	Potato Tobacco Special,	C. C. Kirkland & Son, Girard,	11.30
337	Ten Per Cent. Guano,	C. C. Kirkland & Son, Girard,	11.08

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
4.84	3.23	1.99	10.06	.....	8.07	8.00	2.40	.....	2.40	2.00	*1.52	1.65	24.46	.....	458
5.74	2.86	1.63	10.23	.....	8.60	7.00	4.77	.....	*4.77	5.00	2.65	2.47	33.07	31.00	94
														23.50	1365
5.18	2.94	.95	9.07	.....	8.12	7.00	5.24	.....	5.24	5.00	*2.30	2.47	30.90	28.00	1288
														30.00	543
4.92	2.50	1.94	9.36	.....	7.42	7.00	8.49	.....	*8.49	10.00	2.63	2.47	35.64	.....	287
														35.00	933
5.76	2.97	1.05	9.78	.....	8.73	8.00	4.42	.....	4.42	4.00	1.15	.82	25.20	.....	200
														.....	286
														22.00	161
6.07	2.85	1.12	10.04	.....	8.92	8.00	5.18	.....	5.18	5.00	.88	.82	25.06	25.00	93
														21.00	231
														21.50	896
4.79	3.77	1.63	10.19	.....	8.56	8.00	1.01	.....	1.01	1.00	1.13	.82	21.69	18.00	232
														20.00	901
6.75	2.39	1.42	10.56	.....	9.14	8.00	1.50	8.36	*9.86	10.00	2.13	1.65	37.90	28.00	544
5.23	1.92	1.75	*8.90	10.00	*7.15	8.00	3.84	.....	*3.84	4.00	*1.54	1.65	25.15	25.00	1115
6.32	1.73	1.12	9.17	9.00	8.05	8.00	4.29	.....	4.29	4.00	.98	.82	23.70	23.00	353
3.42	4.27	1.15	8.84	8.00	7.69	7.00	1.20	.....	1.20	1.00	1.08	.82	20.32	21.00	354
4.92	2.51	1.02	*8.45	8.50	7.43	7.00	3.10	.....	3.10	3.00	1.03	.83	21.86	.....	20
4.69	4.23	1.28	*10.20	10.50	*8.92	9.00	2.79	.....	2.79	2.75	1.17	1.03	23.76	21.00	688
3.89	4.42	.89	*9.20	9.50	8.31	8.00	1.16	.....	1.16	1.00	1.14	.83	21.10	19.00	711
4.56	3.28	1.85	9.69	9.50	*7.84	8.00	4.01	.....	4.01	4.00	1.69	1.65	26.76	27.00	1399
4.39	3.67	.84	*8.90	9.50	8.06	8.00	2.17	.....	2.17	2.00	.67	.42	19.44	16.00	652
†3.52	6.31	1.73	11.56	.....	9.83	.....	2.65	.....	*2.65	5.00	*1.30	3.00	25.34	25.00	1371
7.47	1.29	.89	9.65	9.00	8.76	8.00	4.50	.....	4.50	4.00	1.66	1.65	27.90	23.50	1327
5.56	2.89	.79	9.24	9.00	8.45	8.00	3.94	.....	*3.94	4.00	.82	.82	22.54	.....	48
6.35	3.99	1.53	11.87	11.00	10.34	10.00	7.43	.....	*7.43	8.00	1.01	.82	29.58	25.50	167
5.30	2.75	1.66	9.71	9.00	8.05	8.00	10.01	.....	10.01	10.00	1.71	1.65	33.09	31.00	255
2.91	5.02	1.19	9.12	9.00	*7.93	8.00	10.60	.....	10.60	10.00	1.68	1.65	33.03	30.00	573
2.29	5.68	1.33	9.30	9.00	*7.97	8.00	2.35	.....	2.35	2.00	.95	.82	21.02	21.00	574
6.43	2.38	1.21	10.02	9.00	8.81	8.00	2.26	.....	2.26	2.00	1.21	1.03	23.46	21.00	1471
6.40	2.03	1.75	10.18	9.00	8.43	8.00	6.28	.....	6.28	6.00	2.62	2.47	34.36	30.00	1224
3.43	5.01	2.18	10.62	8.00	8.44	7.00	1.57	.....	1.57	1.00	.93	.82	21.24	21.25	1563
5.01	3.28	1.44	9.73	9.00	8.29	8.00	2.07	.....	2.07	2.00	*.94	1.03	21.43	19.50	732
5.14	2.94	.87	*8.95	9.00	8.08	8.00	4.36	.....	4.36	4.00	.93	.82	23.30	21.00	717
8.85	1.57	.66	11.08	10.00	10.42	9.00	6.46	.....	6.46	5.00	2.17	1.65	34.22	30.00	1113
7.59	2.15	.56	10.30	9.00	9.74	8.00	6.04	.....	6.04	4.00	1.24	.82	28.44	21.00	951
6.16	3.55	1.21	10.92	.....	9.71	8.00	4.19	.....	4.19	4.00	.84	.82	24.67	24.00	52
6.02	3.79	.61	10.42	.....	9.81	8.00	2.11	.....	2.11	2.00	1.29	1.23	24.54	23.00	1227
4.79	4.91	1.01	9.81	.....	8.80	8.00	10.62	.....	10.62	7.00	.94	.82	30.45	27.00	53
3.32	5.73	1.13	10.18	.....	9.05	8.00	2.57	.....	2.57	2.00	1.32	1.23	24.13	24.00	64
4.79	3.57	1.28	9.64	.....	8.36	7.00	1.76	.....	1.76	1.00	1.22	.82	22.32	20.00	54
6.06	3.70	1.07	10.83	.....	9.76	8.00	5.48	.....	5.48	4.00	*1.38	1.64	28.69	26.00	72
5.62	3.68	.80	10.10	.....	9.30	8.00	11.17	.....	11.17	10.00	1.26	1.20	33.03	30.00	337

*Constituent falls below guaranty.
†Guaranteed 8 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Oyler & Spangler, Gettysburg, Pa.		
1419	Gettysburg Fertilizer,	York Springs,	10.70
	Oxford Packing Works, Oxford, Pa.		
1392	O. P. W. No. 2.	Wm. H. Hansen, Oxford,	10.53
	Patapsco Guano Co., Baltimore, Md.		
249	Patapsco Blood Bone and Potash for all crops.	Francis Baker, Everett,	9.20
252	Coon Brand Guano,	Francis Baker, Everett,	10.65
267	Patapsco Corn and Tomato Fertilizer,	Jos. Lehman, Holsopple,	11.37
840	The Patapsco Early Trucker for quick growth.	Walter & Fredericks, Montandon,	10.73
718	Grange Mixture,	Jonathan Geesy & Son, Dallastown,	13.44
393	Patapsco Grain and Grass Producer,	D. J. Davis, Ebensburg,	11.15
266	Patapsco Tobacco and Potato Fertilizer,	Jos. Lehman, Holsopple,	11 53
	Pennsylvania Ammonia and Fertilizer Works, Harrisburg, Pa.		
421	†Dauphin Brand,	A. W. Carlisle, Martinsville,	7.50
1337		C. F. Gilbach, Duncannon,	
423	†Potato, Vegetable and Tobacco,	A. W. Carlisle, Ft. Hunter,	8.70
861		M. D. Ebersole, Middletown,	
424	Dissolved Bone and Potash,	A. W. Carlisle, Riverside,	7.95
	Pennsylvania Fertilizer Co., Buffalo, N. Y.		
66	Big Bonanza,	J. E. Einhiple, Albino,	11.55
928	Four Fold,	E. E. Wise, New Brighton,	12.10
927	Truck Manure,	E. E. Wise, New Brighton,	10.35
	J. D. Perkins, Coatesville, Pa.		
179	Perkins' Monarch Phosphate,	J. H. Tingley, Chatham,	10.40
180	Perkins' Special Bone Manure,	J. H. Tingley, Chatham,	9.90
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.		
730	Insula Guano,	M. Gillis, Pennsdale,	7.80
970	Leverings Standard,	H. G. & C. C. Bream, Gettysburg,	8.88
723	Piedmont Farmer's Favorite,	M. Gillis, Hughesville,	9.25
1415	Piedmont Special Farmer's Tobacco Guano,	M. B. Metzgar, Middletown,	10.65
392	Piedmont Penna. Potato Producer,	D. J. Davis, Ebensburg,	8.10
695	Pennsylvania Grain Grower,	H. H. Loose, Menges Mills,	9.05
971	Royal Ammoniated Bone and Potash,	H. G. & C. C. Bream, Gettysburg,	7.78
	Pittsburg Provision & Packing Co., Pittsburg, Pa.		
890		W. C. Goll, Monacco,	
87	†Corn and Potato Fertilizer,	Scobie & Parker, Pittsburg,	6.95
1095		W. J. Gilson, Titusville,	
889	†Special Potato Fertilizer,	W. C. Goll, Monaco,	4.40
909		R. J. Dunn, Wyland,	
	Pollock Fertilizer Co., Baltimore, Md.		
317	Pollock's Ammoniated Bone Phosphate,	Walter Boose, Garrett,	11.75
29	Pollock's Crop Invigorator,	Benner & Sieber, McAllisterville,	9.70
313	Pollock's Superior Corn and Tomato Fertilizer.	N. F. Rayman, Berlin,	9.70
720	Pollock's Superior Corn and Tomato Fertilizer.	Samuel A. Basshinger, Red Lion,	10.85
	Ramsburg Fertilizer Co., Frederick, Md.		
680	Old Virginia Compound,	Nelson Study, Littlestown,	9.70
	Rasin-Monumental Co., Baltimore, Md.		
19	Formula 44,	W. W. Book, Port Royal,	9.10
501	Rasin I. X. L. Fertilizer,	Francis Archey, Penna. Furnace,	10.90

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.						
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.	Found.	Guaranteed.			
‡4.25	5.45	1.85	11.55	.....	9.70	.....	4.34	.....	*4.34	5.00	*.99	1.65	25.64	21.00	1419
6.18	2.89	2.07	11.14	10.00	9.07	8.00	4.52	.....	*4.52	6.00	*.96	1.44	25.23	24.00	1392
3.90	4.66	.84	9.40	9.00	8.56	8.00	2.25	.....	2.25	2.00	.42	.41	15.60	18.00	249
4.36	4.62	1.54	10.52	10.00	*8.98	9.00	3.20	.....	3.20	3.00	.98	.82	23.52	23.00	252
6.17	3.89	.84	*10.90	11.00	10.06	9.00	2.04	.....	2.04	2.60	1.50	1.24	25.87	22.00	267
4.21	2.51	2.35	9.07	8.00	*6.72	7.00	4.86	.....	*4.86	5.00	4.24	4.12	39.13	35.00	840
5.41	2.88	2.09	10.38	9.00	8.29	8.00	2.04	.....	2.04	2.00	*1.59	1.65	24.98	22.00	718
5.79	2.34	.84	*8.97	10.00	8.13	8.00	4.09	.....	4.09	4.00	1.07	.82	23.65	22.00	393
4.84	3.58	1.75	10.17	9.00	8.42	8.00	3.92	.....	*3.92	4.00	1.72	1.65	27.25	24.50	266
9.92	1.03	3.34	14.29	12.00	10.95	10.00	2.54	.....	2.54	2.00	*1.12	1.24	27.04	20.00	421
														21.00	1337
4.23	5.07	1.91	11.21	11.00	9.30	9.00	4.40	3.67	*8.07	9.00	2.29	2.06	36.06	30.00	423
														32.00	861
4.46	4.68	4.54	13.68	10.00	9.14	8.00	3.86	.....	*3.86	4.00	*1.41	1.65	27.81	26.00	424
5.28	4.41	1.89	11.58	9.00	9.69	8.00	5.58	.....	5.58	4.00	.97	.82	26.82	23.00	66
3.65	4.28	1.95	9.88	9.00	*7.93	8.00	3.43	.....	3.43	2.00	*1.30	1.64	24.27	22.00	928
5.33	3.94	2.24	11.51	9.00	9.27	8.00	6.40	.....	6.40	6.00	*1.47	1.64	29.78	28.00	927
†6.43	4.81	2.09	13.33	.....	11.24	.....	4.13	.....	*4.13	5.00	*.95	1.50	27.25	27.00	179
‡2.88	5.92	1.20	10.00	.....	8.80	.....	1.94	.....	1.94	1.00	1.11	1.00	22.23	22.00	180
4.03	2.69	.51	7.23	.....	*6.72	7.00	2.37	.....	2.37	2.00	.57	.41	17.53	17.00	739
5.48	2.57	1.05	9.10	.....	8.05	8.00	3.28	.....	3.28	3.00	*1.59	1.65	25.51	23.00	970
‡5.25	2.19	.20	7.64	.....	*7.44	.....	5.83	.....	5.83	4.00	1.16	.82	24.80	21.00	723
5.58	2.57	.77	8.92	.....	*8.15	8.40	5.00	.....	5.00	4.00	*2.39	2.47	31.15	27.00	1415
5.15	2.43	.77	8.35	.....	7.58	6.00	7.51	.....	*7.51	10.00	1.78	1.65	30.10	27.00	392
6.20	2.42	.94	9.56	.....	8.62	7.00	5.23	.....	5.23	5.00	1.01	.82	25.16	22.00	695
5.10	1.57	.46	7.13	.....	6.67	6.00	3.12	.....	3.12	3.00	*1.00	1.07	20.55	20.50	971
4.31	3.55	2.08	*9.94	11.00	*7.86	9.00	3.60	.....	3.60	3.00	2.48	1.64	30.38	24.40	890
														30.00	87
5.83	3.40	3.04	12.27	10.00	9.23	9.00	1.33	5.26	*6.59	7.00	1.79	1.64	33.03	23.00	1095
														28.00	889
														30.00	909
5.07	3.22	2.37	10.66	9.00	8.29	8.00	2.07	.....	2.07	2.00	1.85	1.65	26.30	22.00	317
5.07	3.31	1.10	9.48	9.00	8.38	8.00	4.26	.....	4.26	4.00	.95	.82	23.62	21.00	29
3.37	4.89	1.71	9.97	9.00	8.26	8.00	2.11	.....	2.11	2.00	.96	.82	21.36	.....	313
3.11	5.06	1.58	9.75	9.00	8.17	8.00	2.09	.....	2.09	2.00	.82	.82	20.43	20.00	720
2.35	6.60	2.91	11.86	11.00	*8.95	9.00	2.17	.....	2.17	2.00	*1.21	1.24	23.84	21.00	680
5.18	2.42	2.97	10.57	8.00	7.60	7.00	.67	3.10	3.77	3.20	3.15	2.55	34.53	30.00	19
6.50	2.60	2.44	11.54	10.00	9.10	9.00	3.61	.....	3.61	3.00	1.13	.82	25.52	.....	501

*Constituent falls below guaranty.
†Guaranteed 10 per cent. soluble.
‡Guaranteed 8 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
18	Rasin Irish Potato Special,	W. W. Book, Port Royal,	3.50
148	Monumental Potato Manure,	Elias S. Brubacher, Richland,	4.70
400	Rasin's National Crop Compound,	Chas. Yeckley, Patton,	10.55
16	Rasin's National Crop Compound,	W. W. Book, Port Royal,	8.10
17	Rasin's Wheat, Corn and Oats Mixture,	W. W. Book, Port Royal,	5.85
152	Rasin's Royal Fish Bone and Potash,	Elias S. Brubacher, Richland,	8.85
472	Rasin's United Grain Grower,	John Rhodes, Ralphton,	8.90
154	Rasin's Vegetable Special,	Elias S. Brubacher, Richland,	5.65
498	Rasin's Special Fish and Potash Mixture,	Isaac Shirey, McClure,	3.70
153	Rasin's XXX Fertilizer,	Elias S. Brubacher, Richland,	9.28
228	Wm. Penn Crop Grower,	H. G. Diehl, Charlesville,	7.85
	Reading Bone Fertilizer Co., Reading, Pa.		
164	Gilt Edge Potato and Tobacco Grower,	John Wengert; Ono,	5.80
486	Special Mixture,	J. W. Painter, Red Top,	7.50
842	Gilt Edge Potato and Tobacco Grower,	J. R. Meck, Fredericksburg,	7.25
989	†Never Fail Crop Grower,	L. A. Geiger, Joanna,	7.35
418		J. R. Meck, Meckville,	
1027		Henry Rinehart, New Ringgold,	
411	Reading Bone Special for all crops,	J. H. Haldeman, Silverton,	6.39
509	Reading Special Potato and Tobacco Grower.	Kachell & Griffith, Knauers,	5.70
843	†Reading Sterling Potato Grower,	J. R. Meck, Fredericksburg,	6.13
195		Jno. W. Slipp, Birdsboro,	
1272		O. B. McCullough, Clearfield,	
578	†Schuylkill Valley Favorite for Corn and Oats.	M. A. McIlhinny, Pine Grove,	9.00
198		A. F. Bauer, Hamburg,	
853		C. R. Bucher, Reitsville,	
510	Schuylkill Valley Favorite for Corn and Oats.	Kachell & Griffith, Knauers,	9.05
968	Reading Special Grain and Grass Producer.	James F. Bell, Gettysburg,	8.10
1084	†Trucker's Guano,	F. M. Wald, Randolph,	8.50
852		C. R. Bucher, Reitsville,	
1271		O. B. McCullough, Clearfield,	
1384	Farmer's Bone and Potash for Corn, Grain and Grass.	John C. Rhoades & Co., Chester Heights.	8.55
1029	Reading Odorless Top Dressing for Lawns,	Henry Rinehart, New Ringgold,	6.95
	Roberts Fertilizer Co., Pittsburg, Pa.		
1072	General Crop Fertilizer,	Geo. Cramer, Fennelton,	4.30
	Geo. T. Sale, Fox Chase, Pa.		
645	Geo. T. Sale's Special Manure for all crops,	Chas. S. Sale & Bro., Fox Chase,	8.00
	Schaal-Sheldon Fertilizer Co., Erie, Pa.		
85	†Farmer's Favorite,	I. W. Scott & Co., Pittsburg,	11.89
1512		J. A. Potter, Centre Road,	
351	†Guano,	Brooklyn Milling Co., Spartansburg,	10.74
84		I. W. Scott & Co., Pittsburg,	
1133		P. A. Drain, Sarver,	
777	Schaal Sheldon's Standard,	L. W. Young, Transfer,	11.15
83	†Trucker's Manure,	I. W. Scott & Co., Pittsburg,	11.20
1139		G. R. Leslie, Arnold,	
	Scott Fertilizer Co., Elkton, Md.		
188	Scott's Corn and Oats Grower,	Wm. C. Holbook, Ercildown,	11.10
1169	Scott's Grain Special,	A. B. Groff, New Holland,	9.90
549	Scott's Potato Grower,	W. J. Schmink & Son, Germansville.	7.65
189	Scott's Potato and Truck Special,	Wm. C. Holbook, Ercildown,	10.15
1109	Scott's Standard Phosphate,	A. L. Peachy, Belleville,	11.68
1322	Scott's Sure Growth Superphosphate,	James Guldner, West Point,	6.90
	M. L. Shoemaker & Co., Philadelphia, Pa.		
1022	Good Enough Superphosphate,	J. Kunkle & Son, McKeansburg,	10.20

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at the point of selection.	Sample number.
5.61	2.09	1.71	9.41	8.00	*7.70	7.00	1.47	7.24	8.71	8.00	3.31	3.29	40.62	32.00	18
3.08	3.50	1.51	8.09	7.00	6.58	6.00	8.32	.....	8.32	7.00	*1.55	1.65	28.72	26.56	148
3.54	5.52	1.99	11.05	9.00	9.06	8.00	4.59	.....	4.59	4.00	1.09	.82	25.66	21.00	400
2.24	5.76	3.25	11.25	9.00	8.00	8.00	4.86	.....	4.86	4.00	1.10	.82	25.23	21.00	16
2.09	5.86	2.55	10.50	9.00	*7.95	8.00	2.36	.....	2.36	2.00	.59	.41	16.65	17.50	17
5.84	2.63	2.24	10.71	9.00	8.47	8.00	4.16	.....	4.16	3.00	1.68	1.65	27.91	24.00	152
1.37	5.83	3.57	10.77	9.00	*7.20	8.00	2.05	.....	2.05	2.00	1.11	.82	21.55	21.00	472
5.08	3.51	1.15	9.74	9.00	8.59	8.00	5.87	4.37	10.24	10.00	*1.43	1.65	33.24	29.00	154
5.48	1.65	1.45	8.58	7.00	7.13	6.00	1.07	10.02	11.09	10.00	3.84	3.29	45.56	33.00	498
5.99	2.86	2.27	11.12	9.00	8.85	8.00	5.72	.....	5.72	5.00	*1.54	1.65	29.22	25.24	153
1.56	6.05	3.18	10.79	9.00	*7.61	8.00	1.20	.47	1.67	1.00	1.17	.82	21.76	18.75	228
3.14	4.45	.89	8.48	.....	7.59	7.00	.80	9.21	10.01	10.00	1.79	1.64	34.14	28.00	164
1.29	7.15	1.66	*10.10	12.00	*8.44	10.00	*2.91	.....	*2.91	5.00	1.46	.....	24.58	.....	486
3.31	4.77	.99	9.07	.....	8.08	7.00	.80	7.92	*8.72	10.00	1.73	1.64	32.89	27.00	842
														18.00	989
1.78	7.06	1.96	10.80	9.00	8.84	8.00	1.61	.....	1.61	1.00	.89	.82	21.18	17.00	418
														19.00	1027
2.19	6.68	1.10	9.97	8.00	8.87	7.00	5.43	.....	5.43	5.00	*1.43	1.64	27.45	20.00	411
2.45	5.98	3.23	11.66	7.00	8.43	6.00	.53	7.23	7.76	7.00	1.02	.82	29.49	26.00	509
														25.00	843
2.16	6.65	2.10	10.91	9.00	8.81	8.00	1.07	7.12	*8.19	10.00	1.09	.82	30.24	28.00	195
														33.00	1272
														19.00	578
1.15	5.97	1.28	8.40	8.00	7.12	7.00	2.54	.....	2.54	2.00	.42	.41	14.70	16.00	198
														17.00	853
1.94	5.48	1.61	9.03	8.00	7.42	7.00	2.73	.....	2.73	2.00	.82	.41	20.19	20.00	510
1.91	6.09	1.91	9.82	8.00	7.91	7.00	2.93	.....	*2.93	3.00	.97	.82	21.76	21.00	968
														32.00	1084
1.80	5.08	1.87	8.75	6.00	6.88	5.00	4.08	.....	4.08	4.00	*2.17	3.28	27.73	27.50	852
														34.00	1271
1.58	5.96	2.37	9.91	9.00	*7.54	8.00	5.47	.....	5.47	4.00	*.70	.82	22.88	22.00	1384
.98	4.86	3.51	9.35	5.00	5.84	3.00	4.61	.....	4.61	2.50	*.95	5.74	21.90	32.00	1029
.19	2.93	5.45	8.57	8.00	3.12	.....	1.90	.....	*1.90	2.00	2.09	1.60	22.66	21.00	1072
2.25	3.40	1.54	7.19	7.00	5.65	5.00	6.46	.....	6.46	6.00	2.38	2.25	29.90	30.00	645
														24.00	85
4.59	5.00	1.30	10.89	9.00	9.59	8.00	2.85	.....	2.85	2.00	.95	.82	23.53	23.00	1512
														25.00	351
3.82	5.22	.91	9.95	9.00	9.04	8.00	4.13	.....	4.13	4.00	1.01	.82	24.22	26.00	84
3.50	5.05	1.33	9.88	9.00	8.55	8.00	2.09	.....	2.09	2.00	2.02	1.65	26.70	25.00	1133
5.74	3.07	1.05	9.86	9.00	8.81	8.00	6.50	.....	6.50	6.00	2.55	2.47	34.29	23.00	777
														36.00	83
														30.00	1139
3.37	6.01	1.05	10.43	.....	9.38	8.00	2.68	.....	2.68	2.00	.49	.41	17.18	19.00	188
3.47	5.18	1.72	10.37	.....	8.65	8.00	4.79	.....	4.79	4.00	.52	.41	19.02	19.00	1169
5.51	2.03	2.22	9.76	.....	7.54	6.00	10.22	.....	10.22	10.00	1.83	1.65	33.79	28.00	549
5.02	3.58	1.50	10.10	.....	8.60	7.00	5.38	.....	5.38	5.00	1.97	1.65	30.12	26.00	189
4.84	4.62	.74	10.20	.....	9.46	8.00	3.61	.....	*3.61	4.00	1.31	.82	25.62	20.50	1109
3.67	3.66	3.69	11.02	.....	*7.33	8.00	4.36	.....	4.36	3.00	1.89	1.65	28.29	28.50	1322
7.24	4.06	2.07	13.37	12.00	11.30	8.00	2.73	.....	2.73	2.00	2.00	1.64	31.11	24.00	1022

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
168	†Swift Sure Guano for Tomatoes, Truck and Corn.	P. R. Boltz, Black Oak Hill,	9.75
147		M. B. Holstine, Richland,	
216		Chas. V. Geiger, White Bear,	
416	Swift Sure New Jersey Special for Oats,	Aaron Bicksler, Fredericksburg,	8.10
575	†Swift Sure Superphosphate for General use.	A. F. Spittler, Pine Grove,	8.55
1036		W. E. Erwin, Somerton,	7.00
505	†Swift Sure Superphosphate for Potatoes,	Chas. V. Geiger, White Bear,	
1035		W. E. Erwin, Somerton,	
409	†Swift Sure Special 10 per cent. Potato Fertilizer No. 1.	P. R. Boltz, Black Oak Hill,	9.00
1034		W. E. Erwin, Somerton,	
159	†Swift Sure Special 10 per cent. Potato Fertilizer No. 2.	S. Z. Gettle, Myerstown,	10.29
146		M. B. Holstine, Richland,	
1023		J. Kunkle & Son, McKeansburg,	
524	Swift Sure Special 10 per cent. Potato Fertilizer No. 1.	Chas. V. Geiger, Geigertown,	8 55
576	Swift Sure Special Potato Fertilizer No. 1,	A. F. Spittler, Pine Grove,	6.93
	Chas. A. Sickler & Bro., Wilkes-Barre, Pa.		
446	Empire Phosphate,	S. D. Warriner, Montrose,	6.68
452	Grave's Potato and Tobacco Manure,	C. S. Page, New Milford,	7.45
	Frank A. Simons, Cornwells, Pa.		
1377	The Farmer's Favorite H. G. Phosphate Potato Grade.	Frank A. Simons, Cornwells,	6.05
1378	The Farmer's Favorite H. G. Phosphate for Truck and Corn.	Frank A. Simons, Cornwells,	6.53
	Smith Agricultural Chemical Co., Columbus, O.		
338	Truck Guano,	C. C. Kirkland & Son, Girard,	9.35
	Southern Fertilizer Co., York, Pa.		
958	Ammoniated Dissolved Bone,	Earnest & Bupp, York,	12.45
311	Special Potato Grower,	Oscar J. Coleman, Somerset,	10.48
	Standard Guano Co., Baltimore, Md.		
1407	Standard Guano,	McClellan Zinn, Carlisle,	10.85
	Swift & Co., Chicago, Ill.		
50	Onion, Potato and Tobacco,	F. H. Fowler, Linesville,	3.95
1470	Swift's Pure Champion Wheat and Corn Grower.	R. G. Young & Sons, New Gallilee,	4.20
	J. M. Templin, Honeybrook, Pa.		
191	No. 8 High Grade Potash Manure,	J. M. Templin, Coatesville,	8.00
	I. P. Thomas & Sons Co., Philadelphia, Pa.		
1325	†Improved Superphosphate,	Jonathan Wolburn, Orwigsburg,	10.20
1406		J. A. Miller, Oakville,	
628		C. Hipple, Westtown,	
566	†Normal Bone Phosphate,	Chas. Mayer, Cressona,	8.45
776		Wm. J. Moyer, Greenville,	
763	Potato Fertilizer,	Compton & Lilly, Troy,	12.20
438	Potato Manure,	S. O. Jones, Athens,	9.30
437	Thomas' Scientific Tobacco Grower,	S. O. Jones, Athens,	5.48
748	†Thomas' Wheat and Corn Fertilizer,	F. L. Van Orman, LeRaysville,	11.18
742		C. H. Henrie & Son, Millville,	
773		Wm. J. Moyer, Greenville,	
196	†Victor Potash Manure,	S. E. Seidel, Hamburg,	9.30
966		D. F. Stitzel, York Springs,	
	James Thomas, Williamsport, Pa.		
366	†Thomas' Special Compound for Wheat, Oats, Corn and Grass.	Jas. Thomas, Jersey Shore,	11.18
1106		L. M. Watt, Belleville,	
377	Thomas' Standard Bone Phosphate,	James Thomas, Montoursville,	11.03
731	Thomas' Potato and Truck Manure,	James Thomas, Pennsdale,	11.70

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
6.40	2.74	3.51	12.65	.....	9.14	8.00	5.87	.....	5.87	5.00	2.01	1.65	32.54	25.00	168
														25.00	147
6.60	3.59	4.51	14.70	.....	10.19	8.00	2.21	.....	2.21	2.00	1.33	.82	27.26	25.00	216
7.32	2.30	3.39	*13 01	14.00	9.62	9.00	5.20	.....	5.20	4.50	*2.86	2.88	36.61	22.00	416
														32.00	575
7.14	2.87	3.37	13.38	11.00	10.01	8.00	7.81	.....	7.81	7.00	*2.77	2.88	39.21	33.00	1036
														35.00	505
4.51	3.33	2.36	10.20	.....	7.84	6.00	10.02	.....	10.02	10.00	*2.86	3.30	38.78	33.00	1035
														34.00	409
														35.00	1034
4.82	3.16	3.13	11.11	.....	*7.98	8.00	10.61	.....	10.61	10.00	*1.81	2.06	34.75	28.50	159
														29.00	146
4.87	2.70	2.55	10.12	.....	7.57	6.00	10.50	.....	10.50	10.00	*2.75	3.30	38.61	30.00	1023
														36.00	524
4.97	2.43	2.66	10.06	.....	7.40	.....	9.23	.....	9.23	.....	3.47	.....	40.68	33.00	576
1.76	3.08	2.44	*7.28	9.00	*4.84	8.00	1.17	.....	*1.17	2.00	*1.15	1.65	17.86	22.00	446
2.37	2.59	2.49	7.45	... .	*4.96	6.00	5.24	.....	5.24	5.00	*.89	1.24	21.01	22.00	452
†2.32	3.18	1.31	6.81	.....	*5.50	.....	3.87	3.32	7.19	6.00	2.70	2.47	32.47	28.00	1377
‡2.68	2.59	1.45	6.72	.....	*5.27	.....	4.30	.....	4.30	3.50	*3.51	3.71	32.70	28.00	1378
5.35	3.01	.72	9.08	.....	8.36	8.00	5.93	.....	*5.93	7.00	3.89	3.28	39.68	35.00	338
7.04	2.86	1.96	11.86	11.00	*9.90	10.00	2.56	.....	2.56	2.50	2.13	1.65	30.07	24.00	958
4.21	4.52	1.05	9.78	9.00	8.73	8.00	4.11	.....	4.11	4.00	1.35	1.24	25.70	22.00	311
1.44	4.42	1.91	*7.77	9.00	5.86	8.00	2.93	.....	2.93	2.00	1.15	.83	20.96	20.00	1407
4.47	3.07	2.98	*10.52	11.00	*7.54	8.00	.67	5.85	*6.52	7.00	1.68	1.65	30.52	26.00	50
1.71	7.64	6.04	15.39	13.00	*9.35	12.00	2.52	.....	2.52	2.00	*1.60	1.65	28.04	28.25	1470
1.33	8.01	1.96	*11.30	12.00	*9.34	11.00	1.33	5.51	*6.84	8.00	*.69	.82	23.43	.....	191
7.60	3.02	.74	11.36	11.00	10.62	10.00	1.53	.....	1.53	1.00	1.13	.82	24.37	.....	1325
														20.00	1406
3.44	3.61	2.30	*9.35	9.50	*7.05	8.50	1.67	.....	1.67	1.50	1.04	1.03	20.38	23.00	628
														23.00	566
														20.00	776
6.22	2.87	.99	10.08	10.00	9.09	9.00	5.74	.....	*5.74	6.00	*1.64	1.65	29.46	30.00	763
6.68	2.32	1.05	10.05	.....	9.00	9.00	5.28	.....	*5.28	6.00	*1.72	2.47	29.20	36.00	438
.31	8.87	.64	9.82	9.00	9.18	8.00	1.60	4.57	6.17	6.00	2.50	2.47	34.03	36.00	437
7.17	2.73	.43	10.33	10.00	9.90	9.00	2.93	.....	*2.93	3.00	.88	.82	23.61	25.00	748
														19.50	742
														22.00	773
7.13	1.67	.45	9.25	9.00	8.80	8.00	5.92	.....	5.92	5.00	.85	.82	25.20	22.00	193
														21.00	966
5.67	3.20	2.26	*11.13	13.00	*8.87	9.00	2.13	.....	2.13	2.00	1.03	1.03	23.14	24.00	366
														24.00	1106
5.94	2.47	1.30	*9.71	11.00	8.41	8.00	1.34	.....	1.34	1.00	1.01	.82	21.12	20.00	377
4.82	2.51	2.65	*9.98	12.00	*7.33	8.00	4.95	.....	*4.95	5.00	*1.55	1.65	26.88	28.00	731

*Constituent falls below guaranty.
†Guaranteed 7 per cent. soluble.
‡Guaranteed 6 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Trenton Bone Fertilizer Co., Trenton, N. J.		
1044	Trenton Empire Potato Manure,	R. D. Conover, Newtown,	9.08
1360	Trenton Potato Manure,	Abraham Good, Doylestown,	8.00
1045	Trenton Tomato and Truck Fertilizer,	R. D. Conover, Newtown,	9.70
1359	Trenton Special Corn Manure,	Abraham Good, Doylestown,	7.79
	A. W. Trout, Stewartstown, Pa.		
950	Trout's Climax Compound Phosphate,	A. W. Trout, Stewartstown,	7.85
	F. W. Tunnell & Co., Philadelphia, Pa.		
608	†Ammoniated Dissolved Bone and Potash,	Wilson & Mendenhall, Toughkenamon.	
596		W. M. Gehman, Macungie,	7.90
1291		H. C. Breckbill, Strassburg,	
1381	Potato and Grain Manure,	Jno. C. Rhodes & Co., Chester Heights.	9.83
1290	Reseived Phosphate,	H. C. Breckbill, Strassburg,	8.45
609	†Royal Fish Guano,	Wilson & Mendenhall, Toughkeuamon.	10.83
1345		Jones & Paxson, Hatboro,	
625	Sweet and White Potato Manure,	Brinton & Worth, West Chester,	12.80
158	No. 1 Special H. G. Potato Manure,	N. R. Yost, Myerstown,	10.30
1049	†Special H. G. Potato Manure,	A. L. Stout, Churchville,	10.85
1382		John C. Rhodes & Co., Chester Heights.	
594	†Trucker's H. G. Fish Guano,	W. M. Gehman, Macungie,	11.35
1056		Jones & Paxson, Hatboro,	
	Tuscarora Fertilizer Co., Baltimore, Md.		
1151	Tuscarora Ammoniated Phosphate,	The Loucka Hardware Co., Scottdale.	9.55
47	Fruit and Potato,	John Wingert, Lewisburg,	6.58
45	Big 4 Four,	John Wingert, Lewisburg,	7.95
46	York State Special,	John Wingert, Lewisburg,	7.08
	J. E. Tygert, Philadelphia, Pa.		
620	†Tygert's Ammoniated Superphosphate,	Jos. L. Quigley, Kennett Square,	8.78
1222		N. B. Cole, Benton,	
1221	†Tygert's Golden Harvest Phosphate,	N. B. Cole, Benton,	7.98
1372		B. I. Latshaw, Royersford,	
507	Gold Edge Potato Guano,	Geo. K. Linderman, White Bear,	10.78
516	†Tygert's Popular Phosphate,	D. L. Binkley, Adamstown,	9.25
760		J. W. Patterson, Springfield,	
506	Potato Guano,	Geo. K. Linderman, White Bear,	9.00
1220	Tygert's Potato Fertlizer,	N. B. Cole, Benton,	7.45
647	Tygert's Standard Bone Phosphate,	Ed. Shallcross, Bustleton,	6.80
1373	Tygert's Victor Bone and Potash,	B. I. Latshaw, Royersford,	9.50
	Union Chemical Works, North Wales, Pa.		
1038	Grain and Grass Grower,	W. E. Erwin, Somerton,	10.75
1037	No. 3 Potato and Celery Special,	W. E. Erwin, Somerton,	8.90
	Virginia-Carolina Chemical Co., Richmond, Va.		
808	V. C. C. Co. Special Corn Compound,	Madden Bros., Three Springs,	12.30
1252	V. C. C. Co. Standard Tomato Grower,	Abram Hostetter, Scalp Level,	8.90
	Jos. C. Walker & Sons Co., Gap, Pa.		
1277	Pride of Pequa Phosphate,	J. C. Walker & Sons, Gap,	8.90
1276	Pride of Pequa High Grade,	J. C. Walker & Sons, Gap,	7.90

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating	Selling price of 2,000 pounds at the point of selection.	Sample number.
4.52	3.51	2.69	10.72	.....	8.03	8.00	9.73	.....	*9.73	10.00	2.50	2.47	37.12	35.00	1044
4.62	3.66	2.29	10.57	.....	8.28	8.00	7.08	.....	7.08	7.00	1.68	1.65	30.58	27.26	1360
3.98	3.87	2.30	10.15	.....	*7.85	8.00	5.76	.....	5.76	5.00	1.99	1.65	30.18	28.00	1045
4.84	3.63	3.29	11.76	.....	8.47	8.00	3.26	.....	3.26	3.00	1.68	1.65	27.37	23.50	1359
2.12	4.70	1.29	8.11	8.00	*6.82	7.00	5.13	.....	5.13	4.00	1.04	.82	23.05	21.00	950
1.73	6.21	.96	*8.90	10.00	*7.94	9.00	2.99	.....	2.99	2.00	.82	.21	20.65	20.50	608
														20.00	596
														19.00	1291
2.61	4.09	1.45	8.15	8.00	*6.70	7.00	7.79	.....	7.79	4.00	2.55	1.65	33.15	27.00	1381
1.58	6.47	.82	8.87	7.00	8.05	6.00	2.44	.....	2.44	1.00	.42	.41	15.14	18.00	1290
1.12	6.26	1.78	9.16	9.00	7.38	7.00	4.30	.....	4.30	3.00	2.07	1.85	27.82	27.00	609
														28.00	1345
2.13	4.64	.84	*7.61	8.00	*6.77	7.00	7.34	.....	*7.34	8.00	2.80	1.65	33.63	31.00	625
1.28	5.88	2.21	*9.37	10.00	*7.16	8.00	9.25	.....	*9.25	10.00	*1.66	2.47	30.90	31.00	158
2.07	5.87	1.04	8.98	8.00	7.94	6.00	3.86	.....	*8.86	10.00	2.73	2.47	36.31	32.00	1049
														32.00	1382
3.31	3.33	1.66	8.30	7.00	6.64	5.00	2.29	.....	2.29	1.75	*3.45	4.12	32.11	31.50	594
														32.00	1056
3.19	3.80	2.37	9.36	8.00	*6.99	7.00	1.24	.....	1.24	1.00	1.94	.82	24.34	23.00	1151
6.73	1.72	1.15	9.60	9.00	8.45	8.00	6.67	4.10	10.77	10.00	*1.51	1.65	33.97	28.00	47
5.07	1.88	1.22	8.17	8.00	*6.95	7.00	4.19	.....	4.19	4.00	*1.53	1.65	25.00	22.50	45
6.25	2.01	1.02	9.28	9.00	8.26	8.00	4.30	.....	4.30	4.00	.86	.82	23.14	20.00	46
2.17	6.15	1.73	10.05	9.00	8.32	8.00	1.96	.....	1.96	1.50	1.33	1.24	23.11	20.00	620
														21.75	1222
3.70	4.40	1.73	9.83	9.00	8.10	8.00	2.99	.....	2.99	2.00	.87	.41	21.68	19.00	1221
														20.00	1372
3.24	5.24	1.49	9.97	8.00	8.48	7.00	4.85	.....	*4.85	5.00	*1.58	1.65	27.49	25.00	507
1.61	5.87	1.86	9.34	8.00	7.48	7.00	1.42	.....	1.42	1.00	.97	.82	19.69	20.00	516
														20.00	760
3.28	4.18	1.71	9.17	8.00	7.46	7.00	6.59	.....	*6.59	7.00	2.07	2.06	30.49	29.00	506
1.53	5.44	1.56	8.53	7.00	6.97	6.00	3.41	.....	*3.41	5.00	.82	.80	20.30	22.00	1220
3.99	4.22	1.70	9.91	9.00	8.21	8.00	2.69	.....	2.69	2.00	1.71	1.65	25.68	26.00	647
5.05	3.51	.97	9.53	9.00	8.56	8.00	4.38	.....	4.38	4.00	.88	.82	23.64	23.00	1373
6.04	2.78	.59	9.41	9.00	8.82	8.00	5.65	.....	*5.65	6.00	*1.40	1.65	27.57	28.50	1038
4.79	2.35	1.17	8.31	8.00	7.14	7.00	9.24	.....	*9.24	10.00	1.77	1.65	31.30	32.00	1037
6.57	1.98	2.53	11.08	10.00	*8.55	9.00	2.16	.....	2.16	2.00	.95	.82	22.52	23.00	808
1.11	5.47	4.02	10.60	8.00	*6.58	7.00	4.80	.....	*4.80	5.00	1.29	.82	24.87	21.00	1252
†7.09	2.46	2.04	11.59	.....	*9.55	.....	3.10	.....	3.10	3.00	2.66	2.47	32.77	25.50	1277
‡4.97	2.05	1.56	8.58	.....	7.02	.....	7.54	.....	*7.54	8.00	*2.38	2.47	32.88	29.50	1276

*Constituent falls below guaranty.
†Guaranteed 10 per cent. soluble.
‡Guaranteed 7 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	F. K. Walt Co., Supplee, Pa.		
526	†Walt's H. G. Truck and Vegetable Manure.	Farmer's Union, Geigertown,	14.00
511		Wm. Worley, Gouglersville,	
1414		J. L. Nissley, Middletown,	
206	†Walt's Special Potato Phosphate,	A. G. Shadel, Shoemakersville,	12.50
512		Wm. Worley, Gouglersville,	
525	Walt's XX Flesh and Animal Bone Phosphate for Grass and Wheat.	Farmer's Union, Geigertown,	14.53
552	†Walt's Grain and Grass Grower,	P. Bittner, Jordan,	12.75
205		W. G. Shadel, Shoemakersville,	
624		R. A. Richards & Co., Mendenhall,	
	John Wengert, Jonestown, Pa.		
165	Keystone Dissolved Animal Bone Fertilizer.	John Wengert, Ono,	8.50
	W. E. Whann, William Penn, Pa.		
5	†Chester Valley No. 2 Ammoniated Superphosphate.	Frances Hower, Mifflintown,	6.55
517		F. S. Stover, Bowmansdale,	
529	Chester Valley Economist Fertilizer,	Seligman & Co., Tamaqua,	7.73
518	†Chester Valley Fish and Potash Fertilizer.	F. S. Stover, Bowmansdale,	7.85
530		Seligman & Co., Tamaqua,	
	The Robert A. Woolridge Co., Baltimore, Md.		
172	Champion Giant Phosphate,	T. G. Evans, Kelton,	11.85
170	Woolridge's Fernwood Grange Mixture,	T. G. Evans, Kelton,	11.75
1263	Special Potato and Tobacco Fertilizer,	Morrison's Cove Manufacturing Co., Martinsburg.	10.68
169	Triumph Pure Bone Phosphate,	T. G. Evans, Kelton,	11.40
	The Woolridge Fertilizer Co., Baltimore, Md.		
3	Woolridge's Clover Leaf Crop Grower,	E. Dumm, Mifflintown,	7.17
819	Tiger Bone Stock Phosphate,	J. L. Reese & Co., Millville,	8.10
	York Chemical Works, York, Pa.		
362	Ammoniated Raw Bone,	A. T. Baird, Island,	11.40
38	†Dempwolf's Potato Manure,	J. D. Lenig, Mt. Pleasant Mills,	8.50
697		Frank Hoke, Nashville,	
1292	Dempwolf's Special Tobacco,	W. K. Bender, Strassburg,	4.20
11	†Dempwolf's Standard Fertilizer,	Wm. Slaughterback, Mifflintown,	10.05
1293		W. K. Bender, Strassburg,	
795	†Dempwolf's Standard Potash,	J. Scott Miller, Fishertown,	8.54
13		Wm. Slaughterback, Mifflintown,	
976		Biglerville Warehouse Co., Biglerville.	
519	†Dempwolf's Potato and Truck Special,	F. S. Stover, Bowmansville,	6.00
118		A. T. Baird, Salona,	
663		Berkheimer & Stambaugh, Adamstown.	
	Henry S. Zook, Elverson, Pa.		
1374	No. 7 Pride of Chester Dissolved Animal Bone Phosphate for General Use.	Henry S. Zook, Elverson,	10.40
1111	†No. 5 Pride of Chester Corn, Oats and Wheat Phosphate.	M. K. Stoltzfus, Belleville,	7.90
991		H. S. Zook, Joanna,	
1376		Henry S. Zook, Elverson,	
992	No. 6 Pride of Chester Dissolved Animal Bone Phosphate.	H. S. Zook, Joanna,	8.52

†Composite sample.

‡The double obelisk placed before the name of a fertilizer sampled by an agent of this Department signifies that such fertilizer was sold in the State of Pennsylvania during the season which the sampling was done, but as no affidavit or certificate of analysis was filed with this Department as required by law, the Department has no record with which to compare the analysis of such samples, if such analysis were made, and hence the samples thus marked were not analyzed.

Secretary of Agriculture.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen				
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
3.64	§4.75	1.19	9.58	.....	8.39	.....	5.25	.....	*5.25	10.00	*2.05	3.30	29.94	32.00	526
														32.00	511
														35.00	1414
3.40	*4.76	1.52	9.68	.....	8.16	.....	4.77	.....	*4.77	10.00	*1.36	1.65	25.86	25.00	203
														28.00	512
4.46	*3.56	1.48	9.50	.....	8.02	.....	3.45	.....	3.45	3.00	*.91	1.65	22.24	24.00	525
3.30	*5.60	1.72	10.62	.....	8.90	.....	3.42	.....	*3.42	4.00	*.76	.82	22.39	20.25	552
														17.75	205
														22.00	624
1.66	6.48	1.78	*9.92	10.00	8.14	8.00	2.00	.....	2.00	1.00	.90	.82	20.71	19.00	165
4.39	2.62	.94	*7.95	8.00	7.01	7.00	3.83	.....	3.83	3.00	1.53	1.15	24.50	.....	5
														23.50	517
2.86	4.77	1.56	9.19	.....	*7.63	8.00	1.81	.....	*1.81	2.00	.76	.41	19.28	22.00	529
3.24	4.18	1.07	8.49	.....	*7.42	8.00	5.33	.....	5.33	5.00	1.59	1.50	26.67	26.50	518
														30.00	530
5.71	3.66	1.33	10.70	10.50	9.37	9.00	2.02	.....	2.02	2.00	.83	.82	22.06	21.00	172
5.38	3.08	1.40	9.86	9.50	8.46	8.00	7.41	.....	*7.41	8.00	1.76	1.64	31.02	26.00	170
6.90	2.61	1.47	10.98	10.50	9.51	9.00	4.53	.....	*4.53	5.00	1.81	1.64	29.71	28.00	1263
5.64	2.66	1.40	9.70	9.50	8.30	8.00	4.42	.....	4.42	4.00	1.30	1.23	25.60	24.00	169
†5.05	3.20	.88	9.13	.....	8.25	.....	2.00	.....	2.00	2.00	.58	.41	19.34	18.50	3
†4.36	4.02	.64	*9.02	.....	8.38	.....	4.36	.....	*4.36	4.50	1.14	1.03	24.36	24.00	819
4.64	6.05	1.86	12.55	11.00	10.69	10.00	3.91	.....	*3.91	4.00	*1.57	1.65	29.02	25.00	362
1.45	5.07	1.02	7.54	6.50	6.52	6.00	7.39	.....	7.39	7.00	*.72	.82	23.07	.....	38
														25.00	697
3.65	1.63	.36	5.64	5.50	5.28	5.00	.93	9.29	10.22	10.00	*3.11	3.30	38.07	38.00	1292
2.12	5.57	1.10	*8.79	9.00	*7.69	8.00	5.06	.....	5.06	5.00	*1.24	1.65	24.81	25.00	11
														24.00	1293
3 11	5.18	.84	9.13	8.50	8.29	8.00	4.01	.....	4.01	4.00	.94	.82	22.90	21.00	795
														22.00	13
														20.00	976
4.90	4.72	.71	10.33	9.00	9.62	8.00	1.60	5.98	7.58	7.00	2.67	2.47	37.63	31.50	519
														35.00	118
														31.00	663
1.53	6.96	1.33	9.82	9.00	8.49	8.00	5.00	.....	*5.00	6.00	*1.44	1.65	26.64	26.50	1374
1.12	5.60	1.78	*8.50	11.00	*6.72	10.00	2.89	.....	2.89	2.00	.73	.41	19.29	18.58	1111
														19.00	991
														18.00	1376
2.12	6.33	1.76	10.21	9.00	8.45	8.00	2.89	.....	*2.89	3.00	*1.06	1.24	22.76	24.00	992

*Constituent falls below guaranty.
†Guaranteed 8 per cent. soluble.
§Guaranteed 6 per cent. reverted.
**Guaranteed 8 per cent. reverted.

ROCK AND POTASH

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Allentown Manufacturing Co., Allentown, Pa.	
533	High Grade Phosphate and Potash,	O. P. Helfrich, Slatington,
	American Agricultural Chemical Co., New York.	
4	Big Crop,	Jas. McCauley, Mifflintown,
439	A. A. C. Co. Fruit Tree Invigorator,	Jas. McNamara, Cadis,
43	Penn Alkaline Bone,	S. J. Kingler, Winfeld,
1344	Shuler's Bone and Potash,	S. M. Shuler & Son, Liverpool,
74	Bradley's Alkaline Bone and Potash,	Beaver Hardware Co., Beaver,
294	Canton Chemical Soluble Bone and Potash,	J. D. Miller, Rockwood,
1127	Clark's Cove Triumph Bone and Potash,	Christ Alexander, Millheim,
2	Detrick's Soluble Bone Phosphate and Potash.	James McCauley, Mifflin,
310	Detrick's Soluble Bone Phosphate and Potash.	Levi Berkey, Somerset,
70	Milsom's Dissolved Bone and Potash,	C. E. Stitt, Platea,
41	Moro-Phillips' Alkaline Bone Phosphate	J. C. Boust, Shamokin Dam,
766	Niagara Dissolved Bone and Potash,	T. F. Hotchkiss, Mainsburg,
1315	Pacific Dissolved Bone and Potash,	C. W. Sailor, Ohio Pyle,
273	Packer's Union Banner Wheat Grower,	C. J. Banon, Hooversville,
112	Reese's H. G. Potash Mixture,	Jos. C. Hays, Salona,
113	Reese's Wheat Special,	Jos. C. Hays, Salona,
32	Susquehanna H. G. Bone and Potash,	N. T. Van Horn, Richfield,
8	Zell's Electric Phosphate,	W. V. Shirk, Oakland Mills,
	Canton Chemical Branch, New York.	
864	Canton Chemical Soluble Bone and Potash,	B. S. Noll, Hillsdale,
	Lazaretto Branch, New York.	
671	Lazaretto Dissolved Bone and Potash,	Hanover Produce Co., New Oxford,
	Reese Branch, New York.	
715	Reese's Wheat Special,	Kohn & Everhart, Manchester,
	Susquehanna Branch, New York.	
660	Susquehanna H. G. Bone and Potash,	Henry Sunday, East Berlin,
	Armour Fertilizer Works, Baltimore, Md.	
121	Banner Brand,	Lott Shoemaker, Windham,
134	Phosphate and Potash No. 1,	Orwell Club, Orwell,
36	Armour's Phosphate and Potash No. 2,	Adam Ocker, Port Treverton,
122	Phosphoric Acid and Potash,	Lott Shoemaker, Windham,
	Baltimore Pulverizing Co., Baltimore, Md.	
814	Penniman's Excelsior Fertilizer,	A. J. Bowser, Mill Creek,
1495	Special Spring Mixture,	Gordon & Son, Markelville,
	Baugh & Sons Co., Philadelphia, Pa.	
682	Baugh's 12 and 5 Phosphate and Potash,	Nelson Study, Littlestown,
217	†Baugh's Soluble Alkaline Superphosphate	Isaac Pierson, Bedford,
105		E. H. Hays, Mill Hall,
635		Brinton Walters, Parkesburg,
	A. D. Birely & Son, Ladiesburg, Md.	
670	Birely's H. G. Bone and Potash,	J. C. Birely, New Oxford,
	Bowker Fertilizer Co., Boston, Mass.	
771	Empire State Bone and Potash,	J. O. Cramm, Espyville Sta.,
136	Golden Harvest,	P. H. Taylor, Rome,

†Composite sample.

FERTILIZERS.

Acid and Potash.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
9.85	†8.18	3.95	1.97	14.10	.....	12.13	.....	6.09	.....	6.09	6.00	21.07	21.00	533
8.65	3.31	5.27	.55	9.13	9.00	8.58	8.00	4.82	.....	*4.82	5.00	16.09	16.50	4
11.10	7.11	3.01	1.50	11.62	11.00	10.12	10.00	8.03	.....	8.03	8.00	21.27	20.10	439
7.20	3.26	3.75	.44	7.45	7.00	7.01	6.00	3.06	.....	3.06	3.00	13.11	13.50	43
11.20	5.29	3.56	.77	9.62	9.00	8.85	8.00	2.36	.....	2.36	2.00	14.08	14.50	1344
10.00	5.14	5.18	1.12	11.44	11.00	10.32	10.00	2.58	.....	2.58	2.00	15.52	18.00	74
9.95	6.03	4.72	.32	11.07	11.00	10.75	10.00	2.04	.....	2.04	2.00	15.07	18.00	294
8.85	5.46	4.40	.75	*10.61	11.00	*9.86	10.00	2.63	.....	2.63	2.00	15.13	.....	1127
10.00	6.64	3.90	.69	11.23	11.00	10.54	10.00	2.27	.....	2.27	2.00	15.34	15.00	2
8.32	4.72	5.29	.64	*10.65	11.00	10.01	10.00	2.11	.....	2.11	2.00	14.55	15.00	310
10.85	4.55	6.91	1.10	12.56	11.00	11.46	10.00	1.94	.....	*1.94	2.00	15.58	18.00	70
8.48	6.27	4.07	.54	*10.88	11.00	10.34	10.00	2.04	.....	2.04	2.00	14.90	.....	41
10.58	7.95	3.06	1.06	12.07	11.00	11.01	10.00	2.12	.....	2.12	2.00	15.81	18.00	766
12.75	3.61	6.53	1.86	12.00	11.00	10.14	10.00	1.89	.....	*1.89	2.00	14.76	17.00	1315
9.90	5.49	4.78	.71	*10.98	11.00	10.27	10.00	2.00	.....	2.00	2.00	14.77	11.65	273
8.70	8.87	3.68	.51	13.06	13.00	12.55	12.00	5.00	.....	5.00	5.00	19.78	19.00	112
8.50	5.40	4.94	.54	*10.88	11.00	10.34	10.00	2.23	.....	2.23	2.00	15.00	15.50	113
6.75	6.86	4.81	.84	*12.51	13.00	*11.67	12.00	4.90	.....	*4.90	5.00	18.93	19.05	32
10.40	6.44	3.82	.80	11.06	11.00	10.26	10.00	2.19	.....	2.19	2.00	15.09	15.00	8
9.58	8.87	1.36	.79	11.02	11.00	10.23	10.00	2.02	.....	2.02	2.00	15.14	14.70	864
10.95	5.53	5.25	.75	11.53	11.00	10.78	10.00	1.96	.....	*1.96	2.00	15.12	15.00	671
9.95	7.14	3.06	.80	11.00	11.00	10.20	10.00	2.19	.....	2.19	2.00	15.14	14.50	715
11.30	9.28	3.30	.54	13.12	13.00	12.58	12.00	5.37	.....	5.37	5.00	20.10	19.25	660
9.50	6.43	3.98	.90	11.31	11.00	10.41	10.00	7.78	.....	*7.78	8.00	20.95	17.40	121
7.34	7.74	2.45	.82	11.01	11.00	10.19	10.00	2.15	.....	2.15	2.00	15.16	12.32	134
6.90	5.48	2.82	.88	9.18	9.00	8.30	8.00	4.65	.....	*4.65	5.00	16.10	.....	36
10.50	6.86	3.35	.47	*10.68	11.00	10.21	10.00	5.09	.....	5.09	5.00	17.96	15.60	122
9.37	2.29	7.98	1.20	11.47	.....	10.27	10.00	2.43	.....	*2.43	2.50	14.98	17.00	814
6.00	.79	6.51	3.13	10.43	.....	*7.30	8.00	1.42	.....	1.42	1.00	12.32	14.00	1495
11.65	4.74	6.35	1.25	12.34	.....	*11.09	12.00	4.02	.....	*4.02	5.00	17.50	19.00	682
8.53	2.55	7.75	1.28	11.58	.....	10.30	10.00	2.35	.....	2.35	2.00	15.00	15.60	217
													17.25	105
													14.00	635
9.15	1.28	7.38	2.18	10.84	9.00	8.66	8.00	5.43	.....	5.43	4.00	17.16	15.00	670
10.85	2.45	6.22	1.66	10.33	9.00	8.67	8.00	2.61	.....	*2.61	3.00	14.22	18.00	771
12.05	9.15	3.12	1.68	13.95	13.00	12.27	12.00	4.91	.....	*4.91	5.00	19.94	21.00	136

*Constitution alls below guaranty.
†Guaranteed 12 per cent. soluble.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	S. B. Brodbeck, Brodbeck, Pa.	
693	Brodbeck's Alkaline,	Fry & Sheffer, Hanover,
	Buffalo Fertilizer Co., Buffalo, N. Y.	
104	General Crop,	W. H. Pifer, Mill Hall,
126	Extra Bone and Potash,	C. Workheiser & Co., Potterville,
55	Bone and Potash,	C. G. Van Winkle, Linesville,
	Coe-Mortimer Co., New York.	
453	E. Frank Coe's Famous Prize Brand Grain and Grass Fertilizer.	W. W. Willmarth, Harford,
139	E. Frank Coe's H. G. Dissolved Bone Phosphate and Potash.	Chas. Easterbrook, Wysox,
	Josiah Cope & Co., Baltimore, Md.	
274	High Grade Soluble Bone and Potash,	Jerome Stufft, Stoyestown,
114	Soluble Bone and Potash,	H. C. Hayes, Mackeyville,
	Eureka Fertilizer Co., Perryville, Md.	
39	Alkaline Bone and Potash,	W. E. Shaffer, Selinsgrove,
799	P. and P. Superphosphate,	A. N. Witter, Waterfall,
	W. S. Farmer & Co., Baltimore, Md.	
1306	W. S. Farmer & Co.'s B. and P. Phosphate.	Samuel Alcott, Ursina,
	Griffith & Boyd, Baltimore, Md.	
184	G. & B.'s XX Potash Manure,	E. A. & J. L. Pennock, Chatham,
	S. M. Hess & Bro., Philadelphia, Pa.	
410	†Emperor Phosphate,	Adam Yeagley, Ono,
247		David Price, Everett,
588		John Griffin, Breinigsville,
494	†Peerless Phosphate,	F. C. Walter, Globe Mills,
727		Harry Fague, Picture Rocks,
493	†Standard Alkaline,	F. C. Walter, Globe Mills,
728		Harry Fague, Picture Rocks,
	Home Fertilizer & Chemical Co., Baltimore, Md.	
952	Universal Compound,	A. W. Trout, Stewartstown,
	Hubbard Fertilizer Co., Baltimore, Md.	
117	Hubbard's Soluble Bone and Potash,	Chas. W. Cook, Beech Creek,
504	Hubbard's Special Mixture of Bone and Potash.	Wm. Thompson, Jr., Lemont,
	Jareeki Chemical Co., Sandusky, O.	
789	Square Brand Phosphate Potash,	E. H. Smith, Guys Mills,
	Keystone Bone Fertilizer Co., Philadelphia, Pa.	
553	Keystone 8 and 5,	Henry Yoder, Pine Grove,
	Lancaster Chemical Co., Lancaster, Pa.	
1504	Alkaline Bone,	Jos. Keiter, Fisherville,
1153	No. 10 Economist Fertilizer,	E. B. Ruhl & Son, Manheim,
	Lancaster Bone Fertilizer Co., Lancaster, Pa.	
666	Diamond Alkaline Bone,	H. W. Hoffnagle, New Oxford,
655	Keystone Bone Standard,	W. C. Leib, East Berlin,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
5.80	.82	6.51	2.12	9.45	9.00	*7.33	8.00	2.53	.....	2.53	2.00	13.16	15.00	693
9.85	3.66	5.80	1.45	10.91	10.00	9.46	9.00	4.40	.....	4.40	3.00	16.66	16.00	104
11.73	6.04	5.46	1.54	13.04	11.00	11.50	10.00	2.27	3.99	*6.26	8.00	21.07	22.50	126
11.53	6.68	5.77	1.32	13.77	13.00	12.45	12.00	4.86	.....	*4.86	5.00	19.58	22.50	55
12.00	4.43	5.77	7.63	17.83	12.00	10.20	10.00	2.46	.....	2.46	2.00	17.54	14.00	453
9.20	3.93	5.81	1.56	11.30	.....	9.74	8.00	4.75	.....	*4.75	5.00	17.31	14.00	139
9.57	6.30	4.70	.57	11.57	.....	11.00	10.00	5.18	.....	5.18	5.00	18.58	.....	274
7.85	5.60	4.58	.66	10.84	.....	10.18	10.00	2.29	.....	2.29	2.00	15.01	15.00	114
10.40	6.15	4.37	1.57	12.09	12.00	10.52	10.00	1.67	.....	*1.67	2.00	14.98	.....	39
8.78	3.47	5.39	2.31	*11.17	16.00	*8.78	14.00	1.14	.....	1.14	.....	13.20	16.00	799
12.80	4.26	6.65	1.64	12.55	11.00	10.91	10.00	1.90	.....	*1.90	2.00	15.31	17.00	1306
11.21	5.83	4.44	1.86	12.13	11.00	10.27	10.00	4.50	.....	*4.50	5.00	17.79	18.00	184
													16.00	410
9.40	4.33	5.63	1.11	*11.07	12.00	*9.96	10.00	1.42	.....	1.42	1.00	13.92	15.50	247
													15.50	588
12.10	7.27	4.58	.92	*12.77	14.00	*11.85	12.00	4.90	.....	*4.90	5.00	19.14	.....	494
													19.00	727
7.50	1.82	6.13	1.37	9.32	9.00	*7.95	8.00	4.98	.....	*4.98	5.00	15.93	.....	493
													18.00	728
3.40	.65	3.84	1.86	*6.35	7.50	*4.49	6.00	3.38	.....	3.38	3.00	11.86	15.00	952
12.25	7.93	4.00	1.17	*13.10	13.75	*11.93	12.00	1.88	.....	*1.88	2.00	16.23	15.00	117
10.15	6.76	4.34	.99	*12.09	13.75	*11.10	12.00	4.54	.....	4.54	4.00	18.21	.....	504
12.95	4.30	5.96	1.42	11.68	11.00	10.26	10.00	2.49	.....	2.49	2.00	15.38	20.00	789
9.60	6.15	2.34	.51	9.00	9.00	8.49	8.00	5.20	.....	5.20	5.00	16.75	16.00	553
12.18	.92	7.03	2.29	10.24	9.00	*7.95	8.00	1.82	.....	1.82	1.62	12.90	14.00	1504
12.54	1.07	8.33	3.11	12.51	11.00	*9.40	10.00	4.36	.....	4.36	2.00	16.86	16.00	1153
12.45	6.42	4.97	1.33	12.72	9.00	11.39	8.00	2.17	.....	2.17	2.00	16.03	16.00	666
11.65	6.82	4.76	1.24	12.82	11.00	11.58	10.00	2.46	.....	2.46	2.00	16.48	18.00	655

*Constitution falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Lister's Agricultural Chemical Works, Newark, N. J.	
916	Atlas Brand Bone and Potash,	Farmer's Co-Operative Supply Co., Imperial,
210	Lister's Animal Bone and Potash,	Wm. Engel, Shoemakersville,
	Lebanon Fertilizer Works, D. Levan, Lebanon, Pa.	
21	Levan's Soluble Bone and Potash,	J. H. Stover, Van Dyke,
	Frederick Ludlam Co., New York.	
708	Ludlam Cecrop's Fertilizer Bone and Potash.	Zinn Bro., York,
706	Ludlam Cecrop's Fertilizer Economy,	Zinn Bro., York,
704	Ludlam Cecrop's Fertilizer, I. X. L. Brand,	Zinn Bro., York,
	Miller Fertilizer Co., Baltimore, Md.	
1279	Buyer's Mixture,	J. C. Walker & Sons Co., Gap,
	Nassau Fertilizer Co., New York.	
256	Grass and Grain Fertilizer,	A. M. McClure & Co., Everett,
258	Potash and Phosphate,	A. M. McClure & Co., Everett,
257	Ten and Eight Special,	A. M. McClure & Co., Everett,
	Northwestern Fertilizer Co., Detroit, Mich.	
1562	Northwestern Bone and Potash,	G. R. Ackley, Sabinsville,
1205	XXX Alkaline Bone,	H. G. Supplee, Bloomsburg,
323	Northwestern XXX Alkaline Bone,	Fred. Trimply, Markleton,
	Ohio Farmers' Fertilizer Co., Columbus, O.	
1232	Soluble Bone and Potash,	J. A. Book, Princeton,
	Patapsco Guano Co., Baltimore, Md.	
237	Columbian Guano,	Wm. J. Diehl, Charlesville,
676	Patapsco Alkaline Plant Food,	J. N. Hersh, New Oxford,
238	Patapsco H. G. Bone and Potash,	Wm. J. Diehl, Bedford,
26	Patapsco Phohspho Potash,	John S. Harley, East Salem,
	Pennsylvania Ammonia & Fertilizer Works, Harrisburg, Pa.	
1336 1410	†Acid Phosphate and Potash,	C. F. Gelboch, Duncannon, E. W. Rupp, Shiremanstown,
	Pennsylvania Fertilizer Co., Buffalo, N. Y.	
433	Phosphate and Potash,	Robert Dixon, Ulster,
	J. D. Perkins, Coatesville, Pa.	
178	Perkins' Globe Phosphate,	J. H. Tingley, Chatham,
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.	
696	Piedmont Economy,	H. H. Loose, Menges Mills,
972	Soluble Bone and Potash,	H. G. & C. C. Bream, Gettysburg,
	Pollock Fertilizer Co., Baltimore, Md.	
589	Pollock's Sun Guano,	Adam Bortz, Wescosville,
	Ramsburg Fertilizer Co., Frederick, Md.	
681	Ramsburg Alkaline Phosphate,	Nelson Study, Littlestown,
	Rasin-Monumental Co., Baltimore, Md.	
236	Rasin's Bone and Potash Fertilizer,	H. G. Diehl, Charlesville,
244	Rasin's Special Bone and Potash,	H. F. Gump & Sons, Everett,
491	Special Formula Corn and Buckwheat,	A. D. Kramer, Globe Mills,
229	Rasin's Wheat Potash Mixture,	H. G. Diehl, Charlesville,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
13.35	8.38	4.35	.88	14.11	11.00	13.23	10.00	4.53	.....	4.53	2.00	19.96	20.50	916
10.70	4.79	4.98	1.17	*10.94	11.00	*9.77	10.00	5.08	.....	5.08	2.00	17.66	18.15	210
8.70	2.65	7.55	.61	*10.81	11.00	10.20	10.00	2.35	.....	2.35	2.00	14.68	15.50	21
11.28	7.76	2.86	.61	11.23	11.00	10.62	10.00	2.60	.....	2.60	2.00	15.87	15.85	708
8.15	2.04	4.40	.44	*6.88	7.00	6.44	6.00	3.18	.....	3.18	3.00	12.73	14.55	706
9.55	3.11	5.62	.37	9.10	9.00	8.73	8.00	4.59	.....	*4.59	5.00	15.90	17.00	704
11.13	7.24	3.05	.66	*10.95	11.50	10.29	10.00	4.83	.....	*4.83	5.00	17.88	16.50	1279
9.85	5.99	4.14	.89	11.02	11.00	10.13	10.00	2.02	.....	2.02	2.00	14.78	16.00	256
9.15	6.83	4.44	.46	11.73	11.00	11.27	10.00	4.86	.....	*4.86	5.00	18.48	20.00	258
8.60	6.83	3.23	.72	*10.78	11.00	10.06	10.00	7.65	.....	*7.65	8.00	20.55	23.00	257
9.90	5.40	4.88	3.00	13.28	11.00	10.28	10.00	2.36	.....	2.36	2.00	15.94	17.00	1562
10.80	8.23	3.93	1.40	13.56	11.00	12.16	10.00	4.83	.....	*4.83	5.00	19.59	17.00	1205
9.55	6.63	4.20	.26	11.09	11.00	10.83	10.00	4.17	.....	*4.17	5.00	17.35	14.00	323
12.40	2.80	7.92	1.97	12.69	.....	10.72	10.00	2.39	.....	2.39	2.00	15.63	18.00	1232
10.98	7.57	3.97	.59	12.13	.....	11.54	.....	4.67	.....	4.67	.....	18.58	30.00	237
8.35	5.19	4.01	.67	9.87	9.00	9.20	8.00	4.32	.....	*4.32	5.00	16.28	19.50	676
8.75	6.09	2.26	1.60	*9.95	.....	*8.35	.....	5.18	.....	5.18	.....	17.02	18.75	238
7.35	3.84	3.29	.28	7.41	7.00	7.13	6.00	3.11	.....	3.11	3.00	13.28	14.00	26
8.55	.62	8.27	2.17	*11.06	12.00	*8.89	10.00	3.68	.....	3.68	3.00	15.45	16.00	1336
													16.00	1410
10.95	5.38	4.85	1.40	1 1.63	11.00	10.23	10.00	3.20	.....	3.20	2.00	16.20	14.00	433
11.15	†4.74	5.37	.94	11.05	.....	10.11	.....	2.29	.....	2.29	2.00	14.95	17.00	178
7.70	6.78	1.79	.99	9.56	.....	*8.57	10.00	1.77	.....	*1.77	2.00	13.52	16.50	696
7.75	7.24	1.98	.56	9.78	.....	9.22	8.00	2.35	.....	2.35	2.00	14.54	14.50	972
10.45	5.36	4.87	.89	11.12	11.00	10.23	10.00	5.31	.....	*5.31	6.00	18.13	18.00	589
13.30	.88	6.75	3.28	*10.91	12.00	*7.63	10.00	2.44	.....	2.44	2.00	13.69	15.00	681
7.03	1.15	8.74	2.58	12.47	11.00	*9.89	10.00	2.42	.....	2.42	2.00	15.04	14.70	236
11.55	5.66	4.64	1.20	11.50	11.00	10.30	10.00	4.84	.....	*4.84	5.00	17.88	18.50	244
4.65	2.24	5.23	1.66	9.13	7.00	7.47	6.00	3.63	.....	3.63	3.00	14.40	13.50	491
7.20	1.17	6.69	1.84	9.70	9.00	*7.86	8.00	5.20	.....	5.20	5.00	16.17	16.00	229

†Guaranteed 10 per cent. soluble.
*Constitution falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Reading Bone Fertilizer Co., Reading, Pa.	
485	†Soluble Bone and Potash,	J. W. Painter, Red Top,
417		J. R. Meck, Meckville,
579		M. A. McIlhinney, Pine Grove,
	Schaal-Sheldon Fertilizer Co., Erie, Pa.	
352	Dissolved Bone and Extra Potash,	Brooklyn Milling Co., Spartansburg,
	Scott Fertilizer Co., Elkton, Md.	
599	Fritch's Special,	D. D. & N. D. Fritch, Macungie,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
9	†Alkaline Bone,	W. V. Shirk, Oakland Mills,
817		C. R. Henrie & Son, Millville,
197	Thomas' Square Deal Fertilizer,	S. E. Seidel, Hamburg,
201	†Special Alkaline Bone,	S. E. Seidel, Hamburg,
10		W. V. Shirk, Oakland Mills,
413		Ed. Shuey, Walmer's Church,
650	†Special Corn Fertilizer,	A. J. Harbold, Bermudian,
412		Ed. Shuey, Walmer's Church,
1246		J. P. Wilson, Elwood,
	Tuscarora Fertilizer Co., Baltimore, Md.	
44	Alkaline,	John Wengert, Lewisburg,
	Virginia Carolina Chemical Co., Richmond, Va.	
807	V. C. C. Co.'s Corn and Buckwheat Special,	Madden Bros., Three Springs,
940	V. C. C. Co.'s Giant Bone and Potash,	Wm. Overdorff, Windsorville,
669	V. C. C. Co.'s Peerless Bone and Potash,	J. C. Birely, New Oxford,
1499	Peerless Bone and Potash,	W. I. Hay, Millersburg,
	Robert A. Wooldridge Co., Baltimore, Md.	
7	German Potash Mixture,	W. V. Shirk, Oakland Mills,
1513	Wooldridge Ideal Grain and Grass Producer.	S. L. Strawhecker, Rebersburg,
963	No. 1 Bone and Potash 6x3 for Corn, Wheat and Oats.	J. W. Glatfelter, Rossville,
1262	Wooldridge No. 2 Bone and Potash, 8x5,	Morrison's Cove Manufacturing Co., Martinsburg.
	Wooldridge Fertilizer Co., Baltimore, Md.	
278	Virginia Belle Potash Mixture,	Jonathan Lambert, Lambertville,
	York Chemical Works, York, Pa.	
632	†Dempwolf's Red Cross,	W. S. Hastings, Atglen,
497		Saml. Shirey, Beaver Springs,
977		Biglerville Warehouse Co., Biglerville,
203	†Dempwolf's Wheat Special,	C. B. Reppert, Shoemakersville,
30		Wm. Slaughterback, McAllisterville,
653		P. C. Smith, East Berlin,
204	†Dempwolf's York Special,	C. B. Reppert, Shoemakersville,
23		Wm. Slaughterback, Mifflintown,
664		Berkheimer & Stambaugh, Abbottstown,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
9.30	1.40	9.86	2.49	13.75	12.00	11.26	10.00	2.50	.....	2.50	2.00	16.12	16.50	485
													14.00	417
													16.00	579
11.70	4.97	5.56	2.07	12.60	11.00	10.53	10.00	4.13	.....	4.13	4.00	17.58	21.00	352
13.05	9.69	3.73	.33	13.75	.....	13.42	13.00	6.28	.....	6.28	6.00	21.79	20.00	599
9.48	6.32	3.12	.97	*10.41	11.00	*9.44	10.00	2.42	.....	2.42	2.00	14.77	15.00	9
													14.00	817
9.10	4.11	5.44	1.02	10.57	10.00	9.55	9.00	2.19	.....	*2.19	3.00	14.37	16.00	197
													17.00	201
9.08	1.96	8.19	1.10	11.25	11.00	10.15	10.00	3.53	.....	*3.53	4.00	15.97	16.50	10
													17.00	413
													22.00	650
8.95	4.11	5.93	1.16	11.20	11.00	10.04	10.00	5.92	.....	*5.92	6.50	18.57	20.50	412
													23.00	1246
7.87	6.25	3.79	.87	*10.91	11.00	10.04	10.00	5.40	.....	5.40	5.00	18.21	17.50	44
7.08	1.20	5.56	1.86	8.62	7.00	6.76	6.00	4.17	.....	4.17	3.00	14.31	15.00	807
12.11	9.26	3.03	.95	13.24	13.00	12.29	12.00	6.43	.....	6.43	6.00	21.30	20.00	940
7.88	.77	7.02	2.68	10.47	9.00	*7.79	8.00	2.62	.....	2.62	2.00	13.70	13.00	669
8.58	4.63	3.52	1.11	9.26	9.00	8.15	8.00	2.55	.....	2.55	2.00	13.83	15.00	1499
9.00	6.90	3.04	.97	*10.91	11.00	*9.94	10.00	2.14	.....	2.14	2.00	14.94	15.00	7
10.60	8.03	3.42	.94	12.39	11.00	11.45	10.00	2.06	.....	*2.06	4.00	16.05	18.00	1513
7.74	1.81	4.45	.50	6.76	7.00	6.26	6.00	3.99	.....	3.99	3.00	13.38	15.00	963
9.90	3.08	5.57	.54	*9.19	14.00	8.65	8.00	4.59	.....	4.59	5.00	15.90	17.00	1262
11.08	†8.77	3.42	.87	13.06	.....	12.19	.....	3.24	.....	3.24	3.00	17.86	17.30	278
10.55	3.24	6.09	1.12	*10.45	10.50	*9.33	10.00	4.68	.....	*4.68	5.00	16.72	17.00	632
													18.00	497
													17.00	977
9.55	4.64	5.72	1.29	11.65	10.50	10.36	10.00	1.45	.....	*1.45	2.00	14.36	13.00	203
													15.00	30
													14.50	653
9.38	3.19	4.44	1.20	8.83	8.50	*7.63	8.00	4.05	.....	4.05	4.00	14.85	14.50	204
													16.00	23
													15.00	664

*Constitution falls below guaranty.
†Guaranteed 12 per cent. soluble.

DISSOLVED BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken
	Bowker Fertilizer Co., Boston, Mass.	
199	Bowker's Am. O. I. O. Phosphate, ...	F. L. Wagner, Hamburg, ...
	D. B. Martin Co., Philadelphia, Pa.	
685	†Martin's Crop Producer, ...	A. P. Lippy, Littlestown, ...
638		R. C. Fairlamb & Sons, Brandywine Summit.
1281		H. W. Sweigert, Gap, ...
684	†Martin's Pure Dissolved Animal Bone, ..	A. P. Lippy, Littlestown, ...
92		J. H. Thompson, Harmarville, ...
898		A. E. Walker, Burgettstown, ...
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
1094	†Guano Fertilizer, ...	W. J. Gilson, Titusville, ...
1135		B. Way, Freeport, ...

†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Found.	Guaranteed.			
				Found.	Guaranteed.	Found.	Guaranteed.					
6.98	4.00	6.52	1.48	12.00	11.00	10.52	10.00	.95	.62	20.42	16.00	199
11.34	6.71	3.12	1.31	11.14	.....	*9.83	10.00	1.09	1.03	20.68	18.00	685
											18.00	638
											17.00	1281
9.60	8.53	4.30	2.26	*15.09	30.00	12.83	12.00	1.99	1.65	29.02	26.00	684
											27.00	92
											28.00	898
5.10	2.63	4.28	3.51	*10.42	11.00	*6.91	9.00	1.96	1.64	22.26	20.00	1094
											20.00	1135

*Constituent falls below guaranty.

GROUND BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chemical Co., New York.	
240	Pure Ground Bone,	H. Frank Gump & Sons, Everett,
	Armour Fertilizer Works, Baltimore, Md.	
375	Bone Meal,	S. G. Updegraff, Williamsport,
388	Raw Bone Meal,	D. J. Davis, Ebensburg,
	Baugh & Sons Co., Philadelphia, Pa.	
694	†Baugh's Raw Bone Meal,	Frey & Sheffer, Hanover,
1479		J. F. Hogsett & Co., Uniontown,
	Berg Co., Philadelphia, Pa.	
603	Berg's Raw Bone Fine,	Solomon Pusey, West Grove,
1164	Berg's Raw Bone Fine,	A. B. Groff, New Holland,
	Buffalo Fertilizer Co., Buffalo, N. Y.	
912	Bone Meal,	W. H. Heckert, Bakerstown,
1187	Pure Raw Bone,	Gifford & Raish, Wellsboro,
	Josiah Cope & Co., Baltimore, Md.	
1174	Pure Ground Raw Bone,	Jones Eavenson, Christiana,
	Griffith & Boyd, Baltimore, Md.	
77	Soft Ground Bone Meal,*	Geo. H. Hegner, Sewickley,
	George C. Lees, Philadelphia, Pa.	
1348	Geo. C. Lees' Pure Ground Bone,	Thos. Haines & Co., Malvern,
	D. B. Martin Co., Philadelphia, Pa.	
328	Pure Bone Meal,	Levi Long, Rockwood,
177	Martin's Pure Ground Bone,	S. K. Chambers & Bro., Elkview,
	Ohio Farmers' Fertilizer Co., Columbus, O.	
339	Fine Ground Bone Meal,	C. C. Kirkland & Son, Girard,
	J. D. Perkins, Coatesville, Pa.	
181	Perkins' Pure Bone Meal,	J. H. Tingley, Chatham,
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
90		
86	†Pure Raw Bone Meal,	W. C. Beckert, Allegheny,
1137		Scobie & Parker, Pittsburg,
		B. Way, Freeport,
	Pollock Fertilizer Co., Baltimore, Md.	
630	Pollock's Soft Ground Bone,	Harvey Spencer, Cochransville,
	Schaal-Sheldon Fertilizer Co., Erie, Pa.	
1134	Fine Ground Bone,	P. A. Drain, Sarver,
	M. L. Shoemaker & Co., Ltd., Philadelphia, Pa.	
1019	Swift Sure Bone Meal,	W. H. Stout, Pine Grove,
	Emil Wahl, Philadelphia, Pa.	
602	Emil Wahl's Warranted Pure Philadelphia Button Bone Dust.	S. K. Chambers & Bro., West Grove,
	York Chemical Works, York, Pa.	
631	†Dempwolf's Pure Ground Bone,	W. S. Hastings & Son, Atglen,
665		Berkheimer & Stambaugh, Abbottstown,

*Considerable added sulphates present.
†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch, "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
7.15	53	47	20.70	20.60	3.66	3.30	29.25	30.00	240
2.90	70	30	24.34	24.00	2.51	2.47	28.50	34.00	375
6.30	74	26	23.91	22.00	3.92	3.70	33.22	29.00	388
6.23	80	20	22.68	21.50	3.75	3.71	32.14	30.00	694
								32.10	1479
7.80	24	76	21.84	20.00	3.93	3.00	29.72	29.00	603
5.85	50	50	21.13	20.00	3.82	3.00	29.94	30.00	1164
5.00	70	30	*21.84	22.00	*2.58	2.87	27.13	28.00	912
7.10	62	38	23.38	22.00	3.56	3.28	31.11	30.00	1187
8.15	80	20	25.62	21.98	*3.10	3.49	31.89	29.00	1174
4.00	70	30	11.26	11.00	2.90	2.47	20.94	32.00	77
4.00	79	21	29.26	22.00	*1.74	2.47	29.66	25.00	1348
4.00	52	48	*20.88	20.90	1.79	1.65	23.12	28.00	328
2.75	77	23	23.97	22.90	1.80	1.65	26.07	25.00	177
3.73	53	47	*18.73	20.00	1.81	1.65	21.72	28.00	339
2.52	60	40	28.44	22.90	*1.82	2.00	28.46	27.00	181
3.93	50	50	*21.25	22.00	*3.71	4.10	29.66	28.00	90
								30.00	86
								25.00	1137
3.85	74	26	24.33	.....	*2.38	2.47	28.33	27.00	630
4.78	76	24	23.09	22.80	2.62	2.47	28.24	29.00	1134
3.25	75	25	23.21	20.00	5.23	4.12	37.48	32.00	1019
13.25	75	25	24.28	24.28	*3.08	3.50	30.78	28.00	602
5.60	67	33	28.26	22.00	*2.44	3.30	30.86	30.00	631
								31.00	665

*Constituent falls below guaranty.

ACIDULATED

Furnishing

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chemical Co., New York.	
360	Bradley's Soluble Dissolved Bone, ...	Wimersbuger Bros., Lundys Lane, ...
407	Clark's Cove Atlas Bone Phosphate, 14 per cent.	J. H. Harbison, Indiana, ...
786	Crocker's Dissolved Bone Phosphate, ...	Chotley & Bowen, Cochranton, ...
1076	Detrick's Dissolved S. C. Bone, ...	B. F. Shanon & Co., Butler, ...
239	Maryland Dissolved S. C. Phosphate, ...	S. F. Diehl, Lutzville, ...
1075	Milsom's Acid Phosphate, ...	Chas. Baner, Butler, ...
1274	Moro Phillip's Soluble Bone Phosphate, ...	B. F. Walker, Christiana, ...
478	Packer's Union Acidulated Bone, ...	Norman Blough, Davidsville, ...
125	Read's Acid Phosphate, ...	Lott Shoemaker, Windham, ...
1302	Tygert Allen's Star Dissolved Bone Phosphate.	J. Colborn, Confluence, ...
765	Wheeler's Electrical Dissolved Bone, ...	J. H. Dewitt, Mainsburg, ...
	Detriek Braneh, New York.	
612	Detrick's Dissolved S. C. Bone, ...	Wilson & Mendenhall, Toughkennamon, ...
	Reese Braneh, New York.	
641	Reese's Dissolved Phosphate of Lime, ...	Wm. C. Ball, Media, ...
	American Reduetion Co., Pittsburg, Pa.	
1309	Acid Phosphate, ...	Jas. Kramer, Markleton, ...
	Armour Fertilizer Works, Baltimore, Md.	
263	Armour's Cereal Phosphate, ...	J. S. Hershberger, Everett, ...
133	Star Phosphate, ...	Orwell Club, Orwell, ...
	Baugh & Sons Co., Philadelphia, Pa.	
213	†High Grade Acid Phosphate, ...	P. S. Shappel, Mohrsville, ...
106		E. H. Hays, Mill Hall, ...
218		Isaac Pierson, Bedford, ...
	Bowker Fertilizer Co., Boston, Mass.	
780	Bowker's Dissolved Bone Phosphate, ...	G. Fogal, Bethel, ...
	S. B. Brodbeck, Brodbeek, Pa.	
692	Ruth Dissolved Bone Phosphate, ...	Frey & Sheffer, Hanover, ...
	Buffalo Fertilizer Co., Buffalo, N. Y.	
787	Soluble Bone, ...	Brown & Gaston, Cochranton, ...
	Coe-Mortimer Co., New York.	
454	E. Frank-Coes H. G. Soluble Bone Brand,	W. W. Willmarth, Harford, ...
	Josiah Cope & Co., Baltimore, Md.	
115	Acidulated Phosphate, ...	H. C. Hays, Mackeyville, ...
	W. S. Farmer & Co., Baltimore, Md.	
318	W. S. Farmer's Dissolved S. C. Bone, ...	Cover & Son, Myersdale, ...
	Hubbard Fertilizer Co., Baltimore, Md.	
254	Hubbard's Crescent Soluble Crop Producer,	A. E. Sponsler, Everett, ...
109	Hubbard's Soluble Bone Phosphate, ...	J. H. Long, Mill Hall, ...
	Miller Fertilizer Co., Baltimore, Md.	
1278	S. C. Rock, ...	J. C. Walker & Sons Co., Gap, ...

†Composite sample.

ROCK PHOSPHATE.

Phosphoric Acid.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
10.85	11.77	2.80	2.16	16.73	15.00	14.57	14.00	15.91	15.00	360
6.75	3.37	9.55	3.64	16.56	15.00	*12.92	14.00	14.22	15.00	407
8.95	10.90	4.20	1.07	16.17	15.00	15.10	14.00	15.76	15.00	786
11.80	12.00	3.15	1.14	16.29	15.00	15.15	14.00	15.97	16.00	1076
7.15	8.98	5.63	.85	15.46	15.00	14.61	14.00	15.10	14.00	239
9.95	10.81	3.74	1.10	15.65	15.00	14.55	14.00	15.37	16.00	1075
8.00	9.46	4.64	1.28	15.48	15.00	14.10	14.00	15.00	13.50	1274
5.78	9.23	5.47	1.22	15.92	15.00	14.70	14.00	15.33	.....	478
9.18	10.40	4.07	1.36	15.83	15.00	14.47	14.00	15.38	15.00	125
8.60	9.74	4.94	1.05	15.73	15.00	14.68	14.00	15.34	17.00	1302
6.88	10.17	4.56	1.40	16.13	15.00	14.73	14.00	15.55	17.00	765
8.88	9.20	3.11	1.86	16.17	15.00	14.31	14.00	15.27	13.00	612
8.05	5.19	7.43	1.09	*13.71	15.00	*12.62	14.00	13.29	15.00	641
3.90	7.73	2.95	.39	11.07	11.00	10.68	10.00	11.94	12.00	1309
5.95	7.59	2.19	.20	*9.98	11.00	*9.78	10.00	11.24	15.00	263
9.20	12.49	2.26	.71	15.46	15.00	14.75	14.00	15.57	12.72	133
10.75	12.19	3.18	.38	15.75	.....	15.37	14.00	15.88	14.00	213
									16.80	106
									14.75	218
8.30	7.27	5.23	2.09	14.59	12.00	12.50	11.00	13.83	14.00	780
8.85	11.73	3.27	.89	15.89	15.00	15.00	14.00	15.74	13.00	692
11.30	8.92	5.35	2.55	16.82	15.00	14.27	14.00	15.45	16.00	787
7.67	2.44	10.78	7.46	20.68	16.00	*13.22	14.00	15.73	13.00	454
6.55	8.34	6.38	1.07	*15.79	16.00	14.72	14.00	15.21	14.00	115
10.75	8.64	5.70	.69	15.03	15.00	14.34	14.00	14.83	17.00	318
9.40	†12.39	1.69	1.76	15.84	.....	14.08	.....	15.48	13.00	254
8.90	12.77	2.61	.53	*15.91	17.50	*15.38	16.00	15.99	16.00	109
11.98	12.62	2.46	.20	15.28	.....	15.08	14.00	15.67	13.50	1278

*Constituent falls below guaranty.
†Guaranteed 10 per cent. soluble.

Sample number.	Manufacture and Brand.	From Whom Sample Was Taken.
	Ohio Farmers' Fertilizer Co., Columbus, O.	
340	Alkaline Bone,	C. C. Kirkland & Son, Girard,
	Rasin Monumental Co., Baltimore, Md.	
149	Rasin's Sea Wall Special,	Elias S. Brubaker, Richland,
	Reading Bone Fertilizer Co., Reading, Pa.	
1028	Soluble Dissolved Bone,	Henry Rinehart, New Ringgold,
	Scott Fertilizer Co., Elkton, Md.	
155	Scott's Tip Top Soluble Bone,	Elias S. Brubaker, Richland,
	M. L. Shoemaker & Co., Ltd., Philadelphia, Pa.	
1018	Dissolved South Carolina Rock,	W. H. Stout, Pine Grove,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
743	†S. C. Phosphate,	C. H. Henrie & Son, Millville,
749		F. L. Van Orman, Leraysville,
	Tuscarora Fertilizer Co., Baltimore, Md.	
1462	Bone Phosphate,	C. W. Book, Pulaski,

†Composite sample.

PHOSPHATE—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
11.33	11.25	4.30	1.53	17.08	.....	15.55	14.00	16.32	18.50	340
2.80	.69	8.42	3.90	13.01	11.00	*9.11	10.00	11.24	14.00	149
6.38	2.50	10.59	3.14	16.23	14.00	13.09	12.00	14.07	14.40	1028
9.83	7.19	6.50	1.35	15.04	.....	*13.69	14.00	14.42	14.50	155
9.00	11.73	4.39	.31	16.43	14.00	16.12	12.00	16.35	14.00	1018
9.65	11.91	3.96	.38	16.25	15.00	15.87	14.00	16.18	13.50 15.50	743 749
8.25	8.92	2.10	.08	11.10	11.00	11.02	10.00	12.22	.....	1462

*Constituent falls below guaranty.

MISCELLANEOUS

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Griffith & Boyd, Baltimore, Md.		
185	Griffith & Boyd Co.'s Nitro Crop Feeder, ..	E. A. & J. L. Pennock, Chatham, ..	6.50
	Roberts Fertilizer Co., Pittsburg, Pa.		
1074	Ammoniate Fertilizer, ...	Geo. Cramer, Fennelton, ...	8.20
65	†Ammoniate Fertilizer with Potash, ...	J. E. Einhipple, Albino, ...	12.30
1071		Geo. Cramer, Fennelton, ...	
61	†Vegetable and Grain, ...	W. M. Hardman, Shadeland, ...	11.05
1073		Geo. Cramer, Fennelton, ...	
	F. W. Tunnell & Co., Philadelphia, Pa.		
610	F. W. Tunnell & Co.'s Raw and Acidulated Bone.	Wilson & Mendenhall, Toughkennamon.	8.70
	Walton Quarries, Harrisburg, Pa.		
1416	*Fertilizer Lime, ...	Walton Quarries, East Lemoyne, ...	
1417	*Fertilizer Lime, ...	Walton Quarries, East Lemoyne, ...	

†Composite sample.

*This sample was taken because the material is advertised upon the bags containing it as "Fertilizer Lime." It has practically none of the usual fertilizer constituents and its only value is in the lime it contains.

Quotations on lime from several different firms f. o. b. their works range from $1.75 to $3.00 per ton for good grade agricultural lime and $6.00 per ton for ground lime put up in jute bags.

FERTILIZERS.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating.	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.		Found.	Guaranteed.			
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.					
.....	.....	.....	.61	.....	.....	.....	3.85	.....	3.85	2.50	8.15	7.40	48.43	45.00	185
.....	.....	.....	.38	.....	.....	.....	.....	.....	.....	.....	2.99	2.50	17.96	15.00	1074
.....	.....	.....	.33	.....	.....	.....	2.95	.....	*2.95	3.00	*2.24	2.50	18.49	17.00	65
														18.00	1071
.....	.....	.....	.56	.....	.....	.....	3.42	.....	*3.42	4.00	*2.22	2.50	18.69	19.00	61
														19.00	1073
6.63	5.60	8.01	20.24	20.00	12.23	10.00	.....	.....	.....	.....	*.93	1.65	21.58	27.00	610
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.00	1416
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.00	1417

*Constituent falls below guaranty.

Analysis.	Number 1416.	Number 1417.
Calcium oxide (Ca O),	11.21	18.19
Calcium hydrate (Ca O_2 H_2),	61.46	48.47
Calcium carbonate (Ca Co_3),	13.25	16.80
Magnesium carbonate (MgC O_3),	.38	.42
Acid insoluble matter,	4.73	5.27
Undetermined,	8.97	10.85
	100.00	100.00
Phosphoric acid,	.13	.14
Potash,	.14	.37
Nitrogen,	.03	.06

COMMONWEALTH OF PENNSYLVANIA.

Department of Agriculture.

BULLETIN No. 171.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH 25, 1901.

BY THE

Pennsylvania Department of Agriculture.

FROM JANUARY 1 TO AUGUST 1, 1908.

HARRISBURG, PA.:
HARRISBURG PUBLISHING CO., STATE PRINTER.
1908.

OATH OF FERTILIZER SAMPLING AGENT.

Commonwealth of Pennsylvania, ss:

Personally appeared before me, ... of .....County of .....and State of Pennsylvania, who being duly sworn according to law, doth depose and say: That he has been duly appointed an agent of the Department of Agriculture of Pennsylvania to collect samples of Commercial Fertilizers for analysis, that he is not in any way interested in the manufacture or sale of any fertilizers, and that he will perform the duties of the office with fidelity in accordance with the quirements of law to the best of his ability, and as set forth in the instructions issued by the Secretary of the Department of Agriculture, governing the sampling of fertilizers in this State.

Sworn and subscribed before me, this .....day of .....
A. D. .....
.....
.....

(Signed) .....

INSTRUCTIONS TO AGENTS ENGAGED IN COLLECTING SAMPLES OF FERTILIZERS FOR THE DEPARTMENT OF AGRICULTURE OF PENNSYLVANIA.

Fertilizer manufacturers sometimes allege that there have been errors made on the part of our sampling agents in selecting samples for analysis. It is due these manufacturers, as well as this Department, that the greatest care shall be exercised on the part of all connected with this work, to insure that the samples are fairly taken, are properly sealed and labeled, and are sent to the chemist in exactly the condition in which the goods were found. In order, therefore, that there may be uniformity of practice on the part of our agents, the following instructions have been prepared for their guidance, and strict adherence to these directions is required:

1st.—No sample shall be taken from the manufacturer's warehouse.

2nd.—No agent shall draw more than two samples of any one brand of fertilizer, unless for some special reason, which he shall state in his report.

3d.—Two samples of each brand shall be taken, if possible, selecting them from different localities.

4th.—Each agent shall make report from time to time in duplicate, giving the number of each sample taken, in consecutive order; the name and the address of the manufacturer, the name and address of the agent selling the goods from which the sample is taken; an EXACT copy of the name of the brand of fertilizer; and the selling price per ton of 2,000 lbs. at point of selection. He shall then subscribe his name to each report and send one copy to the official chemist and the other to the Secretary of Agriculture, at Harrisburg, Pa.

5th.—Agents shall keep full memordanda of all the samples; stating the number of packages from which the sample is taken, together with such additional notes of information as may be of service for future reference, in case the accuracy of their work is called in question.

6th.—The sample for analysis must be taken from at least four sacks. The sampling tube to be run its full length from the top toward the bottom down the centre of the sack, then turned two or three times to fill it, and the contents emptied upon a sheet of clean, tough paper. The samples from the four sacks to be then thoroughly mixed together, rolling the fertilizer back and forth across the paper by lifting the sides alternately. After thoroughly mixing, take a spatula and run it close along the paper under the mixture, lifting it straight up so as to get a perfect cross section of the heap.

7th.—The sample taken as in paragraph 6, is to be AT ONCE packed into the glass bottle provided for the purpose; the lid immediately screwed down tight, and upon the label attached, give the name of the sampling agent and the number of the sample, as marked upon the agent's list. The bottle containing the fertilizer, to be at once inserted into the paper case provided, first writing his name and the number corresponding to that on the bottle on the outside of the case. Then moisten the gum flap and seal securely.

8th.—In shipping to the chemist, great care is to be taken to so pack the bottles as to avoid breaking, and the shipping directions should be securely attached to the package, with the name of the sampling agent marked on the box.

9th.—Agents will keep the Secretary of Agriculture informed in advance of the points to be visited, so as to be promptly reached by telegraph or mail, if necessary.

SPECIAL NOTICE.

The Act of March 25th, 1901, entitled "An act to regulate the manufacture and sale of commercial fertilizers," provides that any person selling or offering for sale any commercial fertilizer which does not have stamped upon the package containing the same, the name of the manufacturer, the net weight of its contents and a statement of the percentage it contains of nitrogen in available form, potash soluble in water and of soluble, reverted and insoluble phosphoric acid, and for which the manufacturer has not paid the license fee required by law, shall be guilty of a misdemeanor and subject to a fine of not less than $25.00 nor more than $100.00. It is generally supposed that the manufacturer only is subject to the above penalty. Manufacturers living within the State who violate the law are within the reach of this Department, and prosecutions for violations when they occur will be brought against them. It is to be regretted, however, that there are instances where manufacturers living outside of the State fail to comply with the law, especially that part of it which requires the filing of a copy of the analysis of the fertilizer sold and the payment of the license fee before placing the same upon the market. Wherever these provisions of the law are not complied with, it becomes the duty of the Secretary of Agriculture to enforce the provisions of the Act.

In order that dealers and agents may be advised concerning this matter, we shall furnish a bulletin, containing a list of the manufacturers who have filed the required analysis and paid the legal license fee, together with the names of the several brands for which such fees have been paid. This will, in some measure, enable dealers to avoid making themselves liable to prosecution. The safer method to be pursued, however, is for the dealer, before purchasing goods from a manufacturer outside of the State, to require a guarantee that the manufacturer will reimburse him for any fines or costs that he may be obliged to pay on account of such manufacturer having failed to comply with the law of this State.

N. B. CRITCHFIELD,
Secretary of Agriculture.